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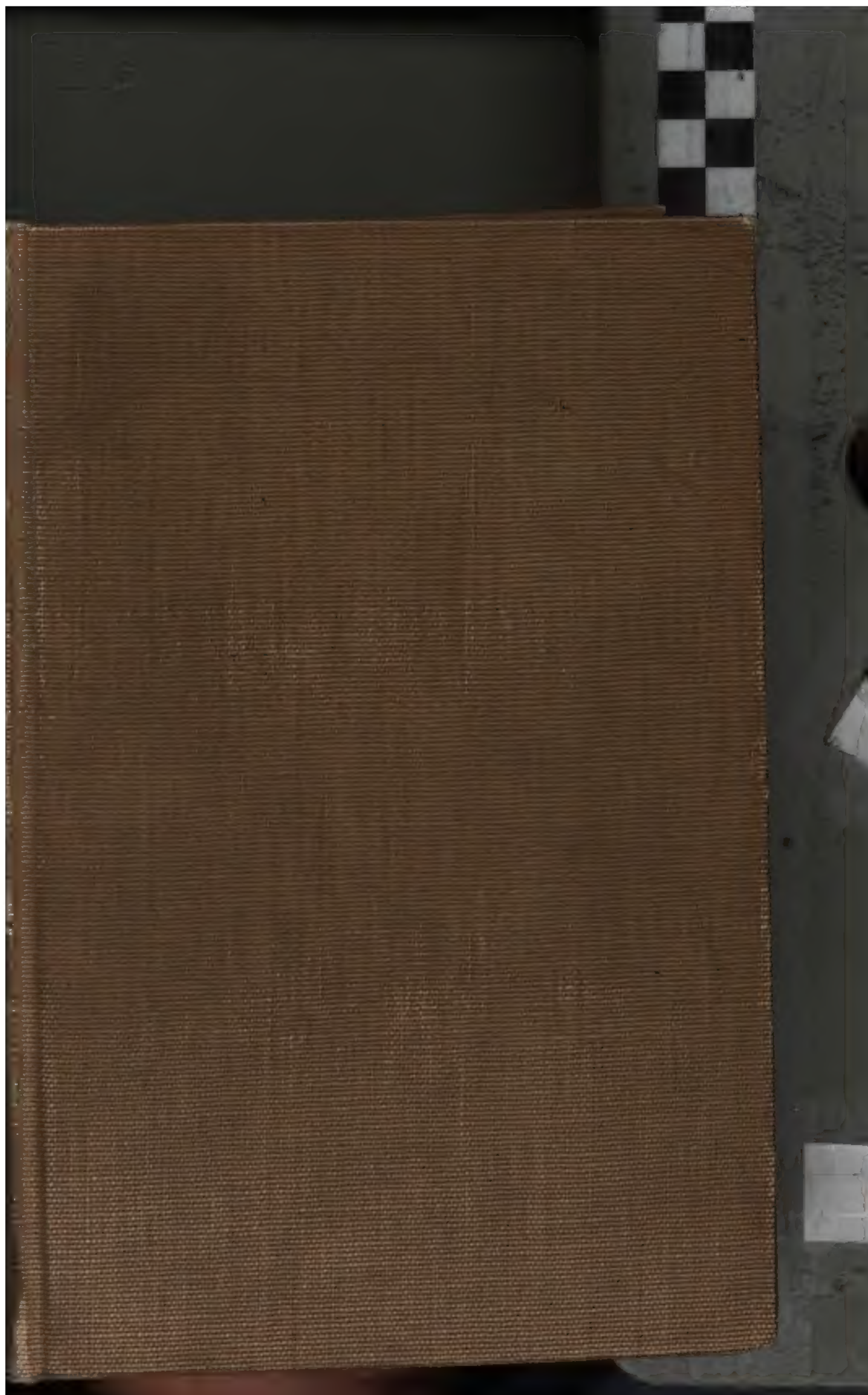
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LELAND STANFORD JUNIOR UNIVERSITY







THE NINTH YEARBOOK
OF THE
NATIONAL SOCIETY FOR THE STUDY
OF EDUCATION

PART I
HEALTH AND EDUCATION

BY

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THIS YEARBOOK WILL BE DISCUSSED AT THE INDIANAPOLIS MEETING OF THE
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PREFACE

It is proposed in this *Yearbook* to consider briefly the different phases of educational administration, supervision, and instruction which have to do with health. Detailed and exhaustive treatment of the various topics enumerated under the several headings would fill several volumes.

The purpose then of this report is to present a synopsis of the field for the discussion of the Society and for the consideration of the teacher and general educator rather than the specialist in school hygiene or physical education.

Recognition is here given of assistance rendered in the preparation of this *Yearbook* by Dr. Edgar Fauver, Miss Caroline Crawford, Miss Mary Reesor, Miss Florence Healy, Miss Josephine Andrews, and Miss Jeanette Seibert.

INTRODUCTION

Health may be considered the keynote, the goal of effort, not only in school hygiene and sanitation, but in the entire physical education of the child, if the word health connotes not simply a normal state of the vegetative organism, but biologic soundness and completeness, present and potential, in respect to the racial as well as the social, industrial, and other obligations of the growing boy and girl. Health is the condition of the individual who is organically sound and who has the biologic basis for the attainment of completeness of body, completeness of mind, and completeness of character.

Health is not the end of life or education but it is an essential condition for the realization of worthy ends, more immediate or ultimate, in the career of the individual. The epigrammatic question may well be reiterated, "What shall it profit a child if he gain the whole world of knowledge and lose his health?" What may a child be allowed to accept, by those in any way responsible, in exchange for any actual or vital part of his health?

The people of this country are rapidly awakening to the appreciation of the national resources. The most important of all the nation's resources is the health of the people, and the most valuable asset in this capital of national vigor is the health of the children. It is the business of the nation to protect from harm at any cost the heirs of all the heritage of the past. During the schooling period the teachers become, as agents of the state, co-trustees with the parents in the great task of guarding, against injury or loss, those upon whom the entire future of the world depends.

Under the most favorable conditions the school is sure to be, in some respects an unhygienic and unsanitary place. Pupils are arbitrarily housed; deprived to a considerable and often serious extent, of fresh air and sunshine at an age when fresh air and sunshine are most important to them. They are confined to the school-room; compelled, oftentimes, to sit still and keep still when reasonable freedom of movement is absolutely necessary to self-expression and to balanced development. Scanty provision, if any, is made in most schools for the large activities of muscles and nerves which are as

essential in principle today as they ever were, for the development of the full complement of faculties which are needed for complete living.

The technical material of education, the elaborate processes of instruction, while intended for the welfare of the pupil, may be directly neglectful or subversive of the health interests of the individual child, if not of the majority.

Children are segregated in the schools from all parts of the community under conditions favorable for the collection and distribution of disease contagion at the age when they are most susceptible to such infection. The school then becomes an effective mechanism for the dissemination of disease infection. The most expert care can only partially reduce this danger.

Further, while under the present educational régime the pupil is taught many things, on the whole, and, in consideration of its relative importance, no subject is taught with less intelligence and skill, in more desultory and neglectful fashion than that which deals with health, and with the responsibility of the child in relation to health.

Finally, the very child, for whom the whole educational process exists, is often so handicapped by unrecognized physical defects as to diminish very materially, if not to nullify, the desired effects of educational effort.

If modern education is to fulfil in any worthy degree its complex of obligations to the child, to the home, and to society—in its relation to health—provision must be made in the school for the following phases of administration, supervision, and teaching:

I. The health condition of the pupil should be thoroughly investigated when he enters school and at intervals thereafter, indicated by the age and individual need of the child. Estimation should be made so far as may be possible of the pupil's capacity for biologic, mental, and moral development, so far as this is dependent upon physical condition and health status. The home should furnish information about personal history and habits of the pupil which may contribute to a better adjustment of the child's education and daily life at home or in school. Physical defects should be recognized and reported to the parents. If these defects are remediable the school should co-operate tactfully with the home for their care and

removal. The limitations, capacities, and tendencies of the individual should be understood as clearly as may be, and such knowledge should be utilized in every practicable way in the child's education. Daily and adequate inspection by teacher, nurse, and physician should insure all that is possible for control and prevention of infectious and contagious diseases.

II. The school environment should not only be free from deleterious influences but favorable in every material detail to the highest welfare of the pupil. All the features essential to the health of children—in the schoolhouse, its surroundings, construction, furnishings, and equipment—are within the power to provide, of practically every community in the country. The expense of the things which really affect the health of the pupil in school should be estimated in terms of child-life, child-health, child-efficiency, and only for convenience reduced to dollars and cents. The school should be made, and may be made, the most sanitary place in the community.

III. All the methods and materials of instruction, including the teacher even, should be wisely judged, selected, and adapted with partial and primary reference to their effect upon the health of the pupil. Nothing in modern education which is vital to the schooling of boys and girls need endanger, except through accident, the health and well-being of any pupil. The hygiene of instruction has received far too little attention.

IV. A dominant chord combining two main notes, in close harmony, should run through all the education of the child.

a) The teaching at every reasonable opportunity of the principles of healthful living as related to the individual, the home, and the community.

b) The inculcation in the pupil, by every practicable means, of hygienic habits, so that his conduct affecting himself and those about him may contribute to healthful and successful living.

V. Provision should be made in school for the physical training of the pupil. The child will engage in some of the desirable fundamental motor activities outside of the school in work or in play, at home or elsewhere. The improving curriculum requires progressively more of the large efforts of body and of the motor brain centers. It is the business of the school in physical education to

secure for the pupil that margin of neuro-muscular training, not otherwise provided, which is necessary to health and to the development of those mental, moral, and social qualities which are required for human efficiency in the large, and which are therefore necessary to complete and successful living.

HEALTH EXAMINATIONS

The health examinations of school children have two purposes :

I. To detect, at as early a stage as possible, cases of infectious and contagious disease, so that, by exclusion and isolation, the rest of the pupils and the community may be protected.

II. To discover physical defects and chronic ailments of importance, in order that the limitations of the pupil may be understood and that curable defects and disorders may receive appropriate attention.

If the state requires the unintermittent attendance at school of children from tender age onward for a period of six, seven or eight years, it incurs a large measure of direct responsibility for their physical welfare.¹

The day is nigh, perhaps, when the elementary school will have quite openly as its first great aim, the conquest of health and sanity for its children. The children are in many cases ill, and if not ailing themselves, are exposed every day to the risk of contact with disease and impurity. The new education discounts the results, however favorable on paper, of a system that ignores this. It recognizes that the creative power is within that gave us all we possess—that it reveals itself in the healthy, the growing, the vigorous, in whom the upward movement of life is not checked. In short, the new education is physiological.²

The investigation in school of the health condition of the pupil was undertaken at first for the purpose of detecting and isolating cases of contagious disease. In a few instances statistical studies were made to determine the effect of school life upon health. Comparatively early, investigations of eyesight were undertaken. Great credit is due to Dr. Cohn and others for thoroughgoing pioneer work in this field. Greater emphasis up to the present has been given, in the health examinations, to medical inspection for contagious and infectious diseases than to detection of chronic or permanent defects.

¹ Dawson, *German Workman*, p. 156.

² McMillan, *Labour and Childhood*.

Organized medical inspection was begun in various cities and countries as indicated below:

Brussels	1874	London	1891
Paris	1879	New York	1892
Antwerp	1882	Dresden	1893
Hungary	1887	Boston	1894
Moscow	1888	Wiesbaden	1896
Leipzig	1891	Japan	1896

In this country several types of state laws affecting medical inspection have been enacted:

- 1899. Connecticut passed a law requiring examinations of eyes in all schools.
- 1903. New Jersey passed a law permitting medical inspection in schools, authorizing the appointment of inspectors and outlining their duties.
- 1904. Vermont required by law examination of eyes, ears, and throats of school children.
- 1906. Massachusetts enacted a law making general medical inspection compulsory in all cities and towns.
- 1909. California enacted a law to "provide for health and development supervision in the public schools of the state of California." This is not a compulsory but a permissive law, intended to authorize boards of school trustees and boards of education to establish health and development supervision in all the public schools of the state. This is apparently the broadest and most comprehensive law relating to the school supervision of child-health which has been passed by any state.

Without state laws, the boards of health in New York, Utah, and California have provided for examinations of eyesight and hearing in the schools. Some form of medical inspection is in operation in about one hundred cities in the United States. At present there are between six and seven hundred regularly appointed school doctors in Germany. In the various forms of health examinations in European countries, much attention has been given to the investigation of physical defects. In the United States, up to the present time, outside of some half-dozen cities, little has been accomplished beyond the inspection for contagious diseases and rather desultory investigations of sight and hearing.

The most comprehensive and successful system of health examination and supervision is that of Wiesbaden. The Wiesbaden

system has become widely and favorably known and has been copied more or less fully by many cities not only in Germany, but in other countries.

About forty towns have adopted the Wiesbaden method *in toto*. In ten years one-fifth of all the German people have caused their children to be educated under the eyes of a school doctor. The whole movement seems to have united a great boldness with great confidence on the part of the people and of the school authorities. Though examinations are not compulsory, barely 4 per cent. of all parents have preferred to have children examined at home.

Information has not been flung away. In Leipzig three-fourths of the parents of delicate and diseased children act at once on advice offered. Only 3.5 per cent. neglect second warning. In Mülhausen and Berlin parents are invited to conferences of teachers and doctors.

To begin with, Wiesbaden not only respected the rights of parents; it began by taking them entirely into its confidence. A circular is sent out to every parent in the first year of every child's school life. It is really a long and confidential letter (very unlike the leaflets issued from time to time by some educational authorities). It runs as follows:

"For the better protection of the health of children attending the public schools, school doctors have been engaged to undertake the medical inspection of children on entering school, to be responsible for their health as long as they attend the school, and responsible, too, for the building itself from the point of view of the scholars' health.

"These provisions will be of great use both to the children and their parents. In the course of his education, much will be learned with regard to the health and bodily condition of each child, and this new knowledge, which is being gained now for the first time, the school doctors will put at the disposal of the parents with whom henceforth they will work in the interests of the children.

"Parents who, however, do not wish that their children should be examined by school doctors have a right to exempt them, as the new provisions do not refer to educational matters that are in any way compulsory. Such parents, however, must furnish the necessary information from their own doctor."

They would be strange parents who would "take offense" on receiving such a letter as this. With this letter is inclosed another, which requests, in case the examination is agreed to, the presence of the father, mother, or guardian.

The Wiesbaden school doctors make a further examination of children in the third year of their school life—yet another in the fifth year. Finally,

in the eighth and last year, just before the child leaves school, there is a final examination. The doctor has by this time the pupil's health card during school life before him. He has had opportunities of watching this pupil's progress and has the teachers' report to help him. Thus he is more or less in a position to give advice to the parents which should be of use to them in choosing the child's future trade or career in life. And to do this is his parting service to pupil and parent.

The weighing and measuring of children will be done by the class teachers. It is to be carried out half-yearly (measurement to half-centimetre and weight to one-quarter of a kilogramme). The doctor will measure regularly the chest girth of all children who are suspected of having lung disease or whose constitution and health are such that they are under medical control.

The health sheet and the weighing and measuring machines bring home to teachers the fact that the healthy children are passing rapidly through certain stages of growth, and that in the course of time, the contrast presented by them to the undernourished and undergrown gets more and more marked.*

Descriptions of certain aspects of the Wiesbaden system will illustrate important points:

Information furnished by parents whose children *are not* examined by the school doctors.

Name of child	
Born	School
General constitution	
Mental capacity	
Respiratory organs	
Spinal column and extremities.....	
Digestive organs	
Skin (parasites)	
Eyesight	
Ear—hearing	
Mouth, nose, and articulation	
Special remarks	
Medical recommendations regarding instruction	
.....	
Wiesbaden.....	.....
	(Signature of doctor)

NOTE.—Doctors are requested to fill up the form as accurately as possible. The first column "General constitution" should be filled up, and that accord-

* McMillan, *op. cit.*

ing to the categories "Good," "Medium," "Bad," with "Chlorosis," "Tuberculosis," etc., in parenthesis as the case may be. The other columns only when symptoms of disease exist. Details of the latter (in the column for "Special Remarks") are particularly desired when the child has been absent from school or receives special attention in instruction and gymnastics. This form must be filled up as often as may appear necessary.⁴

Notice sent to parents as a result of examination in Wiesbaden:

The medical examination (or supervision) ordered by the Magistracy of your child born has shown that it suffers from In the interest of your child's health and of the school it is urgently necessary that.....

(treatment recommended is here stated)

Wiesbaden

190.....

The Magistracy

.....⁵

(Signed).....

MEDICAL REPORT ON LATE EXAMINATIONS (WIESBADEN)⁶

School.....Year..... Calendar Year.....

School Doctor.....

	1	2	3	4	5	6	7	8	9	Remarks
Class number and number of students ..										
General constitution { Good. Medium Bad ..										
Anaemia.....										
Scrofula (Tuberculosis).....										
Rickets										
Epilepsy and mental defects....										
Chest and stomach										
Abdominal ruptures										
Head { Lice										
Skin { Itch.....										
Other maladies										
Spinal column and extremities										
Eye maladies.										
Defective sight										
Mouth and nose.....										
Defective articulation.										
Under supervision										
Free from all ailment										

⁴ McMillan, *op. cit.*

⁵ *Ibid.*

⁶ *Ibid.*

A writer on industrial conditions in Germany comments further upon the value and effect of health supervision as related particularly to the attention given to chronic defects.

It might be thought that the attentions of the school doctors, though so well meaning, are regarded as inquisitorial and intrusive. Nevertheless, thanks to the discretion with which the school authorities and the school doctors go about their work, parental opposition has seldom to be encountered, and even initial prejudice is rare. Almost universally, parents welcome the school doctor's advice and help, and not merely facilitate the periodical examinations, but carry out faithfully the directions given. This is more noteworthy since in no German state do the education authorities possess legal powers to compel examinations or to inflict penalties in the case of refusal to undergo them. The whole system rests on a voluntary basis, yet it acts with remarkable efficiency, for tact and suasion have done what coercion would probably have failed to do. Parents are encouraged to regard the school doctors as friends whose only interest is their children's welfare, and the school doctors for their part take diligent care to cultivate confidence by enlisting the co-operation and the presence of the parents at every examination and all through their work as the guardians of the children's health. On the other hand, if a parent prefers that examination shall be made by the family doctor, no objection whatever is raised; all that is asked is that the same careful and exhaustive investigation shall take place, an investigation embracing the same questions and following the same principles, so that uniformity of procedure and of results may be secured, to which end special forms have to be used.

It is, of course, impossible to set forth the success of this system of school hygiene in the form of a bald set of figures, though figures may none the less be cited, eloquent and conclusive in their testimony to invaluable results. In the first place, young children are delayed from entering school whenever their physical or mental condition is such that school life, work and discipline would be harmful to them. In the second place, every detectable weakness of every child is dragged to light and carefully placed on record. Where medical treatment can be resorted to with hope of recovery, directions to that effect are given, and the school doctor, while he does not himself give professional attention, takes care that his advice is duly followed. Where, on the other hand, a child needs exceptional treatment in school the required attention is noted on the health certificate, and it is the duty of the teacher to see that it is faithfully observed. But the most important part of a school doctor's work is the detection of maladies and weaknesses which, but for his scrutiny, would probably have continued to evade the eye both of parents and teachers,

and might have been the source of permanent injury to the children concerned. To cite the case of Berlin: There school doctors were first employed in the year 1902, and of the children notified in that year for primary admission to school 12.3 per cent. had to be put back for varying terms. In 26 per cent. of the cases the reason was general physical weakness, in 16 per cent., delicate constitution, in 10 per cent., tuberculosis of the lungs. Last year (1905) the number of newly registered children examined was 34,562, and of these 2,927, or 8.5 per cent. were put back, while 7,041, or 23.7 per cent. were placed under oversight, making the total number under oversight in that year 24,225. The reason for oversight was defective sight in 22.4 per cent. of the cases, and general weakness in 13 per cent. The doctors' joint report for the year contained the significant remark, "Most of the children in the incipient stages of tuberculosis attend school without either parent or teacher having any suspicion that anything ails them." But at medical oversight in the narrower sense the more progressive towns do not stop, for here and there specialists are employed for the treatment of eye, ear, throat maladies, and in several towns systematic attention is also given to the teeth of all children in the elementary schools.¹

Noteworthy features in the Wiesbaden system:

1. The means for securing the co-operation and sympathy of parents and teachers.
2. The completeness of the examination.
3. The frequency and regularity of the examination, coming at vital stages of the child's school life.
4. The filing of the health report, a school record, used for reference in connection with the school work of the child.
5. The scientific and educational interest of the doctors which insures thorough examinations and wins co-operation of teacher and parent.
6. The popular nature of the movement as it has developed among the people and has not been imposed by a central government.
7. The movement is an integral part of the school system and is treated primarily as an educational problem.

Some of the practical, direct and indirect results of the Wiesbaden system may be stated thus:

1. Children of subnormal type are profitably delayed in entering school.
2. Individual children are made happier and more efficient.

¹ Dawson, *German Workman*.

3. Teachers are relieved by special individual adjustment of the weaker children.

4. To the movement can be traced:

a) The forming of special classes for defectives requiring modified treatment.

b) Installation of school baths.

c) Providing free meals for school children.

d) Establishment of free clinics and dispensaries for treatment of child ailments.

e) Founding of outdoor schools for weaker children.

The system is defended on economic grounds as an effective means of preserving and improving social and national efficiency. The spirit in which the personal supervision of the child's health in school should be conducted is well expressed in the following:

The new education is indeed more personal but it is more reverent and gentle than the old. Rudeness will wreck all. The human body is not vile. It is the instrument of instruments. The first condition of success is not that the doctor has degrees, it is that he should not offend one of these little ones. The behavior of children—that is not a thing to judge in the first place. To judge is easy, it has been done for ages, to understand is the new task begun very late. Hasty judgment precludes the possibility of complete understanding. To classify according to health is comparatively easy, it may be done by the three card system. To classify ability and weakness is not so easy. Each child presents his own problems.*

The statistics of infectious and contagious disease among school children vary greatly in different places. Infectious ailments like pediculosis (lice) and trachoma (granulation of eyelids) are very common among children of the crowded districts. They are comparably rare in families where children are relatively clean and well cared for. Board of health reports show that cases of measles, diphtheria, scarlet fever, and whooping-cough increase in number from the beginning of the school year in September when the housing-up and segregating process begins, up to March or April, when the children are more of the time out of doors. During the summer vacations the curves indicating the prevalence of contagious diseases are at the lowest. We are driven by such statistics to the conclusion that the school disseminates disease, and is responsible, in part at

* McMillan, *op. cit.*

least, for the greater prevalence of contagious diseases of children during the winter months. Extraordinary precautions based upon improving scientific methods will be necessary in order that the school may successfully safeguard the child from disease infection.

Regulations regarding exclusion from schools for infectious and contagious diseases and ailments are not uniform. Quotations from reports of various cities show confusing variety in procedure. The following suggestions are based upon experience in health inspection of school children and upon observation of such practices in the United States and European countries.

It is advisable to exclude from school, pupils who have the following:

- | | | |
|---------------------------|--------------------------|-------------------------|
| 1. Small-pox | grades, as this may | 13. Coryza (running at |
| 2. Scarlet fever | be early state of | the nose) in pupils of |
| 3. Diphtheria | whooping-cough, | kindergarten or prim- |
| 4. Tonsilitis | before spasmodic | ary grades, as it is |
| 5. Measles | cough develops) | often a symptom of |
| 6. Chicken-pox | 11. Trachoma (granu- | measles |
| 7. Mumps | lation of eyelids), if | 14. Pediculosis, ring- |
| 8. Acute adenitis (sudden | there is discharge | worm, scabies (itch), |
| swelling of the glands | from eyes | other skin infections |
| of the neck, which | 12. Acute conjunctivitis | (if treatment of these |
| may be infectious) | (this is usually eith- | disorders is under |
| 9. Whooping-cough | er ["pink eye"] in- | supervision of a school |
| 10. Persistent cough (in | fection of eye, or | nurse exclusion is not |
| pupils of kindergar- | a symptom of | necessary) |
| ten and primary | measles) | |

This aspect of the work of the school nurse is very important, as it permits children with these minor ailments to continue in school.

The following regulations have been used successfully for several years in a large city school:

Each pupil who has been absent from school for three or more consecutive days for any reason must obtain a written permit from the school physician before being readmitted to school.

EXCLUSION FROM SCHOOL

No child will be admitted until after the expiration of the period of infection, as follows:

Diphtheria and membranous croup.—From beginning of throat symptoms

until one week after laboratory culture shows the throat and nose^{*} free from diphtheria bacilli. Children who have been exposed to this disease may return to school ten days after date of exposure, or if the disease has broken out in the home, ten full days after change of residence.

Scarlet fever.—From earliest manifestations of illness until desquamation is completed. Not less than six weeks. The period of exclusion will be increased if catarrhal conditions persist. Children exposed to this disease may return to school two weeks from date of exposure, or if the disease has broken out in the home, fifteen days after change of residence.

Measles and German measles (Rubella).—Three weeks from onset of disease, or until catarrhal stage has passed and cough has entirely disappeared. Children exposed to this disease will not be permitted to return to school until ten full days after date of exposure, or if the disease has broken out in the home, ten days after change of residence.

Whooping-cough.—Ten weeks, or until thirty days after the last characteristic coughing spell.

Chicken-pox.—Two weeks, or until desquamation is completed. If the disease has broken out in the home the child may return to school after change of residence.

Mumps.—Exclusion from school until seven days after swelling has entirely disappeared.

Modification of these rules may be desirable for high-school and college students.

In exclusion of pupils from school for contagious disease, wisdom dictates that the child shall stay away longer than is necessary after recovery rather than to endanger his school companions by returning too soon. The benefit of the doubt should be given to the many rather than to the one.

The limitation of contagious disease among children involves many difficult problems. One of these relates to the "bacillus or germ carriers." It is now well established that a person who has had diphtheria, for example, and has made a complete recovery, may carry diphtheria germs in the throat or naso-pharynx for an indefinite period and may, while in good health after convalescence, convey the germs to other people with perhaps resulting diphtheria which may be of the most severe type. Such a person is a germ carrier, and a very dangerous individual to be at large.

It is even possible that a child who has never had diphtheria may

^{*}In some cases, cultures from the throat may be negative, while cultures taken from the nasal passages may show presence of diphtheria bacilli.

be a diphtheria germ carrier, and may cause diphtheria in other children. A certain very capable graduate nurse is at the present time a diphtheria carrier, and is debarred from nursing. An apparently healthy pupil or teacher may then be a germ carrier and dangerous to others for this reason. In a Minnesota town recently the new superintendent found that diphtheria had occurred annually for several years. Cultures were taken from throats of all the school children at the beginning of the school year. Eight healthy diphtheria bacillus carriers were found among the pupils. They were excluded from school, received proper attention, and diphtheria was for the time stamped out of that town. It is now known that germ carriers may convey the bacilli of typhoid, diphtheria, tuberculosis, tonsillitis, and perhaps pneumonia and other diseases. "Typhoid Mary" has never had typhoid, but as a domestic servant has conveyed typhoid to other people innocently yet most effectively. Twenty-six cases (with one death) of typhoid have been attributed to this woman. Another woman who had typhoid eighteen years ago has worked in a dairy and as an unconscious typhoid carrier has caused many cases and several epidemics of the disease. It is entirely probable that in the near future teachers and pupils will be examined to detect carriers of disease germs.

In the more efficient detection of incipient cases of contagious disease the school nurse has demonstrated the great value of this one phase of her work. It is practically impossible for the school doctor to inspect all the children each day or each week. The grade teacher is not qualified to note some of the finer indications of beginning disease. The school nurse, with her special training and by daily inspection of all pupils, bridges the gap in inspection between teacher and doctor, and may perform service of almost inestimable value. Dr. Cabot states that—

for ten years in Boston schools, the average number of cases of scarlet fever found each year under inspection of teachers and doctors was 14. In 1908 under inspection of school nurses 1,000 cases were found. That means that the nurses are nearly seventy times as good as the teachers in making the diagnosis of scarlet fever. Under so-called medical inspection (really teachers' inspection) 86 cases of measles was the average number found each year. The school nurses in 1908 found 2,285 cases, or about thirty times as many.

The more comprehensive examination of pupils for chronic weaknesses and defects in addition to detection of acute disease, is coming into vogue slowly. The most significant pronouncement concerning this wider scope of health investigations is contained in the *Memorandum on Medical Inspection of Children in Public Elementary Schools under the English Education Act of 1907*.

This new legislation aims at the physical improvement and, as a natural corollary, the mental and moral improvement of coming generations. It is founded on a recognition of the close connection which exists between the physical and mental condition of the children and the whole process of education. It recognizes the importance of a satisfactory environment, physical and educational, and, by bringing into greater prominence the effect of environment upon the personality of the individual child, seeks to secure ultimately for every child, normal or defective, conditions of life compatible with that full and effective development of its organic functions, its special senses, and its mental powers which constitute a true education.

This memorandum also states that the work of medical inspection cannot be properly accomplished unless

the teacher, the school nurse (where such exists) and the parents or guardians of the child co-operate heartily with the school medical officer.

A recent report from Tasmania shows a sudden development of thorough health examinations resulting from no traditional medical inspection. The work is under the Medical Branch of the Education Department in close co-operation with educational administration. Its object is stated—

To put children in the most suitable condition for receiving instruction.

Observation and special research show that a considerable percentage of the children in the schools are in such a condition of ill-health that their physical development is vastly more in need of special attention than their intellectual development.¹⁰

An inquiry concerning health examinations in schools was sent out within a year to all cities (136) in the United States having a population of 30,000 or more. Answers were received from 112 of these: 35 had no regular inspection; 10 had simply medical inspection for contagious diseases; 8 reported experimental and irregular inspections; 17 had periodic examinations for sight and

¹⁰ Burnham, *Pedagogical Seminary*, 1900, p. 92.

hearing only; 42 show evidence of systems of health examinations in varying degrees of development and completeness.

The cities having the best organized systems are: Boston, Chicago, Cleveland, Los Angeles, Milwaukee, New York, and Philadelphia.

Examinations in the following thirty-five cities include beyond inspection for contagious disease other items than sight and hearing:

Akron,	Fall River	Memphis	San Antonio
Baltimore	Fitchburg	Newark	Schenectady
Birmingham	Harrisburg	New Orleans	Springfield (Ohio)
Brockton	Hartford	Newton	Superior
Buffalo	Haverhill	Norfolk	Syracuse
Camden	Houston	Paterson	Trenton
Cincinnati	Indianapolis	Portland (Ore.)	Utica
Detroit	Lancaster	Reading	Waterbury. ¹¹
Elizabeth	Little Rock	Rochester	

Physical defects among school children have been found in varying proportions.

Dr. Hertel, in his well-known investigation of the health of pupils in the better-class schools of Copenhagen before 1885, found that of the boys 31.1 per cent. and of the girls 39.4 per cent. were sickly.

Dr. Francis Warner in the examination of 50,000 school children in London found that 10.8 per cent. of the boys and 8.5 per cent. of girls had abnormal nerve signs; 7.9 per cent. of boys and 6.9 per cent. of girls were mentally dull; 8.8 per cent. of boys and 6.8 per cent. of girls had had some developmental defects. Of the cases with developmental defects, 38.4 per cent. of the boys and 49.9 per cent. of the girls were mentally dull. Of those who were mentally dull, 57.6 per cent. of the boys and 52.6 per cent. of the girls showed abnormal nerve signs.

Dr. Risely examined the eyes of 2,422 school children in Philadelphia and found that 44.7 per cent. had some deficiency of vision.

Dr. Sexton examined 570 school children in New York City and found that 13.3 per cent. had deficient hearing in one or both ears. "Of these only one was known by the teacher to be defective, and only ten knew themselves to be deficient in this sense."

Examinations of 40,000 school children by school physicians in the Duchy of Saxe-Meiningen, Germany, in 1900, showed that 23 per cent.

¹¹ Some other cities from which reports were not received should, perhaps, be added to this list.

were myopic, 10 per cent. or more had spinal curvature, and 60 per cent. had teeth which needed attention.

Examinations of 900 pupils in the Horace Mann Schools of Teachers College, New York City, during 1902-03 showed that 34 per cent. had myopia, 12.9 per cent. had functional heart disorders, 5.6 per cent. had spinal curvature with some vertebral rotation, 31.2 per cent. more had asymmetry of spine, hips, or shoulders, 14.6 per cent. had adenoids or chronically enlarged tonsils.¹²

STATISTICS OF DEFECTIVE HEARING AMONG SCHOOL CHILDREN

	No. Examined	No. Defective	Percentage
United States.....	57,072	2,067	3.6
Russia (Zhernunski's report).....	2,221	388	17.42
Stuttgart (Weil's report).....	5,095	1,528	30.00
Bordeaux (Moure's report)	3,588	616	17.00
Copenhagen (Schienieglow's report).....	581	290	50.00
London (Dr. Cheate's report).....	1,000	568	56.8
Edinburgh.....	567	211	35.24
Aberdeen.....	600	87	13.00

Moure claims that 500 out of 616 could have been cured of their deafness if properly treated.
The teachers after the tests selected 70 children whom they considered backward; 51 of these children were dull of hearing.

The following table shows the number of defects found in boys of Truant School No. 120, Brooklyn, N. Y.:

No. examined.....	88	No. cases deformity of extremities	2
No. found defective.....	77	No. cases defective nasal breathing	17
No. cases anterior glands.....	62	No. cases bad mentality.....	9
No. cases bad teeth.....	34	No. cases skin disease.....	13
No. cases defective vision.....	48	No. cases cardiac disease.....	3
No. cases hypertrophied tonsils....	19	No. cases defective hearing.....	1
No. cases post nasal growth.....	8	No. cases defective palate.....	1

Examinations of school children in Minneapolis in 1908 showed:

	Percentage		Percentage
Malnutrition	23.3	Defective hearing	7.7
Enlarged cervical glands.....	53	Defective teeth	43.5
Heart disease	2.1	Enlarged tonsils	31.1
Lung disease	4.2	Adenoids	12.6
Defective vision	23.9	Treatment necessary	65.1

One writer states that in Germany 90 per cent. of all elementary-school children suffer from decayed teeth. Condition of children's

¹² "School Hygiene," *Teachers College Record*, March, 1905.

teeth is not much better, if at all, in this country, and statistics show further that the teeth of country children are as bad as those of city children, while native-born American children show about the same percentage of decayed and neglected teeth as those of foreign birth. A school physician of Ashley, Mass., reports that 95 per cent. of the school pupils have decayed teeth. A school physician at Northampton, Mass., states: "The most deplorable fact from the examination, was the almost total lack of care given children's teeth. Out of 600 children only 74 had received any attention and the larger number of the remaining 526 exhibited most uncleanly and unhealthy mouths." Examination of 572 children of Foxboro, Mass., showed 1,303 teeth which needed to be filled and 334 which required extraction.

SHARE OF THE TEACHER IN HEALTH INSPECTION

In district schools and in schools of small communities which are not visited daily by a doctor, and in large schools where a nurse is not employed, the teacher has the responsibility for detecting at least the signs of acute disease. She should be able to test eyesight and hearing, and it is desirable further that she should note as far as may be possible the indications of important chronic defects.

The following directions are taken from the admirable handbook on *Medical Inspection* issued by the Massachusetts Board of Education.

SOME GENERAL SYMPTOMS OF DISEASE IN CHILDREN WHICH TEACHERS SHOULD NOTICE; AND ON ACCOUNT OF WHICH THE CHILDREN SHOULD BE REFERRED TO THE SCHOOL PHYSICIAN

Emaciation.—This is a manifestation of many chronic diseases, and may point especially to tuberculosis.

Pallor.—Pallor usually indicates anaemia. Pallor in young girls usually means chlorosis—a form of anaemia peculiar to girls at about the age of puberty. It is usually associated with shortness of breath; the general condition otherwise appears good. Pallor may also be a manifestation of disease of the kidneys; this is almost invariably the case if it is associated with puffiness of the face.

Puffiness of the face.—This, especially if it is about the eyes, points to disease of the kidneys; it may, however, merely indicate nasal obstruction.

Shortness of breath.—Shortness of breath usually indicates disease of the heart or lungs. If it is associated with blueness, the trouble is usually

in the heart. If it is associated with cough, the trouble is more likely to be in the lungs.

Swellings in the neck.—These may be due to mumps or enlargement of the glands. The swelling of mumps comes on acutely, and is located just in front of and below the ear. Swollen glands are situated lower in the neck, or about the angle of the jaw. They may come on either acutely or slowly. If acutely, they mean some acute condition in the throat. If slowly, they are most often tubercular. They may also be the result of irritation of the scalp, or of lice in the hair.

General lassitude and other evidences of sickness.—This hardly needs description, but may, of course, mean the presence or onset of any of the acute diseases.

Flushing of the face.—This very often means fever, and on this account should be reported.

Eruptions of any sort.—All eruptions should be called to the attention of the physician. It is especially important to notice eruptions, because they may be the manifestations of some of the contagious diseases. The eruption of scarlet fever is of a bright scarlet color and usually appears first on the neck and chest, spreading thence to the face. There is often a pale ring about the mouth in scarlet fever, which is very characteristic. There is usually a sore throat in connection with the eruption. The eruption of measles is a rose or purplish red, and is in blotches about the size of a pea. It appears first on the face, and is usually associated with running of the nose and eyes. The eruption of chicken-pox appears first as small red pimples, which quickly become small blisters.

A cold in the head, with running eyes.—This should be noticed, because it may indicate the onset of measles.

Irritating discharge from the nose.—A thin, watery nasal discharge, which irritates the nostrils and the upper lip, should always be regarded with suspicion. It may mean nothing more than a cold in the head, but not infrequently indicates diphtheria.

Evidences of sore throat.—Evidences of sore throat, such as swelling of the neck and difficulty in swallowing are of importance. They may mean nothing but tonsilitis, but not infrequently are manifestations of diphtheria or scarlet fever.

Coughs.—It is very important to notice whether children are coughing or not, and what is the character of the cough. In most cases, of course, the cough merely means a simple cold or slight bronchitis. A spasmodic cough, that is, a cough which occurs in paroxysms and is uncontrollable very frequently indicates whooping-cough. A croupy cough, that is, a cough which is harsh and ringing, may indicate the disease, diphtheria. A painful

cough may indicate disease of the lungs, especially pleurisy or pneumonia. A long-continued cough may mean tuberculosis of the lungs.

Vomiting.—Vomiting usually, of course, merely means some digestive upset. It may, however, be the initial symptom of many of the acute diseases, and is therefore of considerable importance.

Frequent requests to go out.—Teachers are too much inclined to think that frequent requests to go out merely indicate restlessness or perversity. They often, however, indicate trouble of some sort, which may be in the bowels, kidneys or bladder; therefore, they should always be reported to the physician.

Eye signs which should be noted by the teacher have been tabulated conveniently thus:

- a) All those with "sore eyes"—the name commonly given to chronically or acutely inflamed eyelids.
- b) All those with styes.
- c) All those whose eyes are congested and "red" where they should be blue-milk-white.
- d) All those that squint, either constantly or occasionally.
- e) All those that hold their reading-books nearer to the face than one foot.
- f) All those that hold their books at arm's length in order to read.
- g) All those that cannot read blackboard writing freely from their seats.
- h) All those that "peer" like a cat in the sun, or shut their eyelids to a chink.
- i) All those that have a drawn, anxious look when reading from map, or blackboard, or wall card.
- j) All those that slope the head to read.
- k) All those that complain of headaches or show very small pupils at the end of the day.
- l) All backward children showing one or more of these symptoms.
- m) All that fear the light.

DIRECTIONS FOR TESTING EYESIGHT

CONDITIONS FOR TEST

I. Make the test for each pupil singly and in a room apart from the schoolroom if possible.

II. For children too young to read, use the chart with pictures of familiar objects.

ARRANGEMENT OF CHART

III. Hang the Snellen test chart away from windows, in a good light, on a level with the head.

TEST

IV. Place the pupil 20 feet from the chart. Hold a card over one eye firmly against the nose without pressing on the covered eye. Have pupil name letters from the top (larger letters) downward, reading from left to right with one eye and from right to left with the other to avoid reading from memory.

RECORDING

V. The lines on the chart are numbered. At a distance of 20 feet the normal eye should read the letters on the 20-foot line.

Record would be $\frac{20}{20}$ { distance in feet of chart from the eye
number over the line of smallest letters read.

If the smallest letters which can be read are on the 30-foot line, vision will be recorded as $\frac{20}{30}$. If smallest letters which can be read are on the 40-foot line, the record would be $\frac{20}{40}$. If pupils cannot see the largest letters numbered, for instance 100, have him approach slowly until he can read them. If 10 feet is the greatest distance at which largest letters can be read, record would be $\frac{10}{100}$. A mistake of two letters on the 20-foot line and of one on the 30- or 40-foot line may be allowed.

REFERRING PUPILS

VI. If the child has less than normal vision; if the eyes are persistently red and inflamed; if there is pain in eyes or head after reading, notice should be sent to the home that medical attention is needed.

DIRECTIONS FOR TESTING HEARING

THE EXAMINER

I. To insure more uniformity in tests, one person, if possible, should make all the tests in a school. This person should have normal hearing and conduct the tests in such a way that the children have no fear.

PLACE FOR TEST

II. The tests should be made in a quiet room not less than 25 to 30 feet long. The floor should be marked with parallel lines one foot apart.

TEST

III. The test should be made with the whispered voice, which should be heard by the normal ear at 25 feet. The child should repeat what he hears, and the distance at which words can be heard distinctly should be recorded. Each ear should be tested separately with the eyes closed, and the other ear should be tightly closed with the finger during the test.

RECORDING

Hearing may be recorded by a fraction:

$\frac{\text{Numerator}}{\text{Denominator}}$ e.g., $\frac{20}{25}$ { distance in feet at which whisper is distinctly heard
distance at which whisper should be heard by normal ear.

WATCH-TICK TEST

If hearing is defective, it may be tested by a watch-tick and the distance recorded in inches—in same manner—at which watch is heard. The tick in different watches varies, but it should be heard at a distance of 3 to 5 feet.

GROUP TEST

A rough, but sometimes useful whisper test of hearing may be given to a number of children sitting approximately in a row with eyes closed at a distance of 25 feet from the teacher, but the group test will never be so accurate as the individual test.

The teacher with little practice may examine children's teeth.

The teacher also should observe signs indicative of nervous and mental conditions of children:

NERVE SIGNS

a) Restlessness, inability to stand or sit quietly in a child formerly self-controlled; rapid twitching movements of head, face, body, arms, hands, or legs—these are frequently early and slight symptoms of chorea (St. Vitus' Dance).

b) Slower movements and twitchings, sometimes habit spasms which may be due to eye strain, adenoids, or other abnormal conditions.

c) Faintings, or moments when lips turn blue and child seems unconscious of what is going on about him. These may be the lesser seizures of true epilepsy.

d) Irritability, excessive fears, morbidness, crying fits, undue sensitiveness may indicate neurasthenic condition (chronic fatigue).

WORK OF THE SCHOOL NURSE

The well-trained nurse is becoming a most important factor in the care and supervision of health of school children. Her service to child-life and to education has passed beyond the experimental stage.

About one hundred and fifty school nurses are employed in New York City at a salary for each of \$75 a month. School nurses are also employed in Boston, Philadelphia, and several other large cities. The functions of the school nurse may briefly be summarized as follows:

1. Daily inspection of pupils in school. With training they may become more expert than the school doctors, even, in the detection of early symptoms of scarlet fever, measles, diphtheria, chicken-pox, and mumps.

2. Treatment of minor injuries and direction of treatment of such conditions as pediculosis, ringworm, scabies, and conjunctivitis (not trachoma).

3. Visitation of homes (outside of school hours) to instruct parents about treatment ordered by the doctor and to give suggestions about matters relating to the home care of child, and home sanitation in general. The nurse may give practical demonstrations of brushing the teeth, treatment of pediculosis, the giving of a bath. The services which the qualified nurse may perform are too extensive and varied to enumerate and impossible to estimate in value.

PHYSICAL DEFECTS IN SCHOOL CHILDREN

The examination of pupils for chronic defects when the child enters school, and annually or biennially afterward, may profitably involve the following items:

- | | | |
|-----------------------|----------------------------|--------------------------|
| 1. Age | charge | tions, curvature) |
| 2. Height | 9. Throat (tonsils, aden- | 17. Abdominal walls (for |
| 3. Weight | oids) | hernia) |
| 4. Chest measurements | 10. Teeth | 18. Feet (condition of |
| (in special cases) | 11. Cervical glands | arches) |
| 5. Eyes (condition of | 12. Skin | 19. Nervous and mental |
| conjunctiva) | 13. Bones (with reference | development (pre- |
| 6. Vision | to rickets) | cocious, retarded) |
| 7. Hearing | 14. Heart | 20. Stage of development |
| 8. Nose (concerning | 15. Lungs | in adolescence |
| mouth breathing) and | 16. Spine (posture, devia- | |
| catarrhal nasal dis- | tions, shoulder posi- | |

As part of the investigation of the general health condition of the pupil, information about family, personal health history, and about home habits may be of great value.

Such requests for information will in many cases call attention to factors in the home life of the child which may have an important bearing upon the health of the pupil and upon his school life.

A blank to be filled out by the parents may serve thus as a valuable link between home and school and contribute to more effective co-operation between parents and teachers in the interests of the child, not only in relation to physical but mental and moral welfare. Such a home blank has been used for several years in the Horace Mann School in New York City with excellent results. The blank given below for illustration is similar to the one referred to above, and suggests the details of information which may be found.

HEALTH BLANK TO BE FILLED BY PARENTS

Date
Name in full
Name and address of parent or guardian.....
.....
Date of birth.....Place of birth.....
How many older brothers?.....Older sisters.....
How many younger brothers?.....Younger sisters.....
Health of child since birth.....
Health of child now: Excellent, good, fair, poor.....
Name diseases or injuries that child has had, and note permanent effects
of such upon health.....
.....
What weaknesses or tendencies to ill-health exist?.....
.....
Which of these tendencies are hereditary?.....
.....
Average number of hours in bed.....
Is sleep sound or restless?.....
Is child refreshed and cheerfully ready for the day's tasks?.....
Is appetite good, medium, or poor?.....
What does the child eat for breakfast?.....
Number of hours out of doors daily.....
Favorite out-of-door exercises or games.....
Does child prefer outdoor play, or reading for recreation?.....
Average time for home study, if any.....
Conditions for home study: Artificial light and arrangement, number of
people in room, noise and confusion.....
Studies or lessons taken out of school and number of hours a week given
to each
Habit of bowels.....
Dates of successful vaccinations.....
Date of last attempt at vaccination.....
General remarks

Weight is an important indication of the health condition of the child. The pupil should be weighed every year, and in case of acute illness or other health disturbances, at more frequent intervals. If the child is materially below the standard weight for age and height, medical care should be given. If the weight is greatly above the standard, medical care may also be needed.

RELATIVE WEIGHT AND HEIGHT TABLE—GIRLS

The figures represent weight in pounds

Height in inches	5 Yrs.	6 Yrs.	7 Yrs.	8 Yrs.	9 Yrs.	10 Yrs.	11 Yrs.	12 Yrs.	13 Yrs.	14 Yrs.	15 Yrs.	16 Yrs.	17 Yrs.	18 Yrs.	19 Yrs.	20 Yrs.
39	34															
40	37	35														
41	38	37														
42	41	39	39													
43	41	41	42													
44	45	43	44	42												
45		45	45	45												
46		46	47	47												
47			50	49	49											
48				51	51											
49				53	53	54										
50				56	56	57										
51					59	58	60									
52					63	62	62	63								
53						64	63	66	65							
54						69	68	69	68							
55							70	71	73							
56							75	75	76	78						
57								78	80	81						
58								83	86	88	89					
59								88	89	93	97	100				
60								94	94	96	100	104	109	103	99	99
61								99	100	102	102	109	109	106	105	111
62									104	104	106	111	110	107	111	114
63										107	109	116	110	112	113	114
64										112	118	116	117	114	116	115
65										114	118	121	125	120	123	125

pounds in older pupils, and is slightly greater for boys' than for girls' clothing.

The foregoing tables give in whole number of pounds the weights of boys and girls of different ages and different heights. The method of using the table will be readily apparent, e. g., the mean (corresponding closely to the average) weight of a boy twelve years old and 58 inches tall is 84 pounds.

Possible injurious effects of the more important physical defects of children may be classified as follows:

I. Defective eyes with imperfect vision

- Headache commonly through forehead or back of head, or both.
- Blurring of sight, but, in hypermetropia with eye strain, vision may be exceptionally good, especially for distant objects.
- Nausea and dizziness, sometimes disturbances of digestion with resulting malnutrition.

- d)* Nervous exhaustion with neurasthenia.
- e)* Nervous irritability and lack of nervous control shown in muscular twitching of face, arms, and legs.
- f)* Mental inability to grasp an idea presented through the eyes.
- g)* Retardation in school.
- h)* In rare cases convulsions.

Some medical authorities have attributed epileptic and epileptiform seizures to abnormal eyes.

II. *Defective ears*

- a)* With catarrh of middle ear—danger of mastoid disease.
- b)* With deficient hearing, pupil is often dull, careless, listless, inattentive, and mentally backward.
- c)* Retardation in school.
- d)* Pupils are often considered mentally defective when the only primary defect is imperfect hearing.

III. *Adenoids*

These are growths of lymphoid tissue (somewhat similar to enlarged tonsils) in the naso-pharynx, up behind the soft palate, and not usually visible on inspection of throat without a laryngoscopic mirror. The causes of adenoid enlargement are not clearly understood. They seem to belong to civilization. Some primitive races are free from them and possibly all.

a) Structural effects.

1. High-arched palate.
2. Narrowing of upper jaw.
3. Deformity of chest, resulting from obstructed and imperfect breathing, shown by lateral depression of front of chest and prominent sternum (breast bone).
4. Disturbed development of teeth and vocal organs.
5. Accompanied by large tonsils in one-third of cases.

b) Functional disturbances.

1. Mental.

- (a)* Disturbances in function of brain resulting in aprosechia nasalis—i. e., difficult for patient to form an idea of anything new; is stupid, has difficulty in retaining ideas, weakness of memory, inability to turn his thought upon a definite subject, lack of power of attention. Guys found among 152 patients with adenoids 62 with decided aprosechia, 32 with slight degree, and 58 with none.

- (b)* Irritability, depression, and often disorderly conduct.

2. Deafness. This is present in a large percentage of all well-marked cases and is due to blocking of Eustachian tubes. Freudenthal found 467 cases of deafness in his 1,000 cases.
 3. Defects in sense of smell and taste.
 4. Defects in voice (nasal voice).
 5. Chronic rhino-pharyngeal catarrh shown by a persistent nasal discharge. This is often one of the first symptoms. In very young it is manifested by snuffles.
 6. Obstruction of air passage resulting in breathing disturbances, manifested by open mouth, great restlessness at night, the child being forced to assume various attitudes, i. e., sleeping on face, etc., in order to breathe better.
 7. Reflex.
 - a) Catarrhal spasm of larynx, or croup.
 - b) Headache.
 - c) Intractable cough and hoarseness.
 - d) Bronchial asthma.
 - e) Enuresis (incontinence of urine).
- c) General effects.
1. Malnutrition and anaemia.
 2. Underdevelopment, physical and mental.
 3. Predisposition to otitis media (middle ear disease) laryngitis, colds of a remittent nature; increased susceptibility to disease infections, such as tuberculosis, diphtheria, scarlet fever, etc.

Description of appearance of a child with marked enlargement: mouth open, dull, sleepy, with inquiring look; upper lip short and thick; upper jaw narrowed; nasal orifices small and pinched; the face full under the eyes; listless and indisposed to physical or mental exertion; stupid and backward; in school from one to two years behind the normal pupil of same age; undersized.

IV. *Enlarged tonsils*

The tonsils are believed to have useful function in infancy and early childhood, but normally they decrease in size and almost disappear when the child is from five to seven years of age.

Enlarged tonsils produce many of the unfavorable results attributed to adenoids. The two conditions are often associated and it is difficult to distinguish between their effects. Enlarged tonsils produce susceptibility to

- a) Tonsilitis.
- b) Quinsy.

- c) Diphtheria.
- d) Rheumatism.
- e) Tuberculosis.
- f) Pneumonia, and perhaps other forms of infection.

The presence of enlarged tonsils and adenoids in school children should be known and when any disturbances of health can be attributed to them, these structures should be removed. Their absence is an unqualified advantage.

V. Defective teeth

"If I were asked to say whether more physical deterioration was produced by alcohol or by defective teeth, I should unhesitatingly say—defective teeth. In some schools as many as 98 per cent. of pupils show defective teeth. From 50 to 75 per cent. of all school children in this country need at this moment dental care."¹⁸

¹⁸ Osler, *London Lancet*, October 21, 1902.

a) Direct effects:

1. Pain of excruciating type resulting in great loss of time and rest.
2. Foul breath with unsightly and inflamed mouth.
3. Improper mastication of food.
4. Extension of decay in sound teeth.
5. Decay of temporary teeth resulting in unsound and carious permanent teeth.
6. Infection of glands.
7. Infection of maxillary (jaw) bone.
8. Earache with otitis-media (middle ear disease) and deafness.
9. Headache.
10. Disturbance in function of eye.
11. Frequent digestive disturbance.

b) Indirect effects.

1. Condition of poor nutrition and less resistance to disease.
2. Carious teeth form an almost perfect culture bed for growth of pathogenic bacteria. This fact with lowered resistance leads to increased frequency of infection with pneumonia, diphtheria, etc.
3. Results which accompany defective hearing.
4. Lowering of vitality and temporary or permanent ill health.

There are twenty dental clinics in New York City where teeth are extracted or filled either free or at a very moderate charge, but this number is entirely inadequate to the needs of the population.

- VI. *The condition of the skin* is an important indication of the general tone and health condition of the body.
- VII. *Rickets* produces softening of the bones with different degrees of deformity, and indicates malnutrition which may injure other tissues of the body including the brain.
- VIII. *Abnormal conditions of the heart*, even if temporary, may disturb health and if neglected may result in permanent weakness of the heart itself or of the body in general. The condition of the heart is always an important index of the health condition and is often a valuable guide in adjusting amount of sleep, arrangement of school programme, and selection of muscular exercise which is most suitable for the pupil.
- IX. *The lungs* are important as a favorable location of tuberculous disease. Lung tuberculosis is more common among school children than has commonly been supposed. In pupils who are under weight, anaemic, lacking in vitality, even if not coughing, the lungs should be carefully watched.
- X *Deviations of spine*, roundness of shoulders and stooping postures are common among boys and girls especially between ages of eleven and sixteen. Many children outgrow these conditions without special attention, but these asymmetries should be inspected from time to time to prevent as far as possible the more chronic defects in posture, and the occasional cases of genuine scoliosis (curvature of the spine) which begin so insidiously.
- XI. *Abdominal hernia* (rupture) involves serious and often dangerous weakness of the abdominal walls. It is important for the welfare of children, in the occasional cases which exist, that the condition should be detected and given appropriate treatment.
- XII. *Weak foot arches* may produce:
- a) Pain in the instep or sole of the foot, sometimes in the ankles, knee, or hip (discomfort in feet or legs, which may be called growing pains or rheumatic pains, is often due to flat foot). A child in good health does not have growing pains. Persistent "growing pains" should always be investigated and given intelligent care.
 - b) Disability, of some degree, in walking and standing, with stiff awkward gait as a result of the loss of springiness in the foot, even if discomfort does not diminish inclination to walk. Unhygienic shoes; walking and standing with toes turned out; improper methods in the gymnasium in standing, marching, and

various forms of exercise—all these conditions help to weaken arches and flatten feet. It is important for many reasons that children should be able to stand, walk, and run easily and comfortably. There is a surprising proportion of school children today who have some degree of weakness of the feet, and whose general efficiency is thereby to some extent weakened. Pupils and parents should be instructed regarding hygienic shoes; and the material and methods of gymnastic instruction need some reconstruction for the prevention of flat and weak feet.

XIII. *Phimosis in boys* (curable by circumcision) may cause:

- a) Condition which makes cleanliness difficult or impossible, with danger of infection and inflammation, and other disturbances.
- b) Hernia and other injuries from straining in voiding urine.
- c) Local sensitiveness and irritation, which is one of the most frequent causes of masturbation (self-abuse).
- d) Reflex nervous irritation which may result in insomnia, night terrors, nocturnal incontinence of urine, constipation, indigestion, malnutrition, irritability of temper, wandering attention and nervous instability.
- e) In rare cases, even chorea (St. Vitus Dance) and hysterical manifestations.

XIV. *Nervous and mental states* in relation to healthful development need constant supervision. Precocity is often more serious from the health standpoint than the same degree of mental slowness. The precocious child should not be pushed in school, but rather held back. On the other hand, really backward children should be carefully studied and curable defects should be promptly corrected.

Recent studies by Ayres¹⁴ indicate that children tend to outgrow certain defects with advancing age (though not so uniformly as to justify neglect of these) and that physical defects are only in moderate proportion of cases the prime cause of retardation in school. It is always important, however, to examine the backward child with scrutinizing care for physical defects which may, to some extent at least, cause retardation.

XV. *The progress of organic as well as mental and moral development* should ever be considered in relation to age; but the pupil should be judged and adjusted on an individual basis, with reference to his present and future welfare so far as may be advisable, independently of age or type.

¹⁴ L. P. Ayres, *Laggards in Our Schools*.

COST OF HEALTH SUPERVISION IN SCHOOLS

The expense of health supervision in the schools varies according to the extent of work done and the compensation given. The annual cost ranges per capita up to \$1.50.

The general and thorough health supervision costs much more than the limited medical inspection for contagious disease. There is no recognized standard for payment of medical inspectors. Dr. Osler has said in relation to the work of medical inspection in England: "If we are to have school inspection, let us have good men to do the work and let us pay them well. It will demand a special training and a careful technique." The medical inspectors in England are on the average much better paid than in this country.

No expense of education is more thoroughly justified than the money paid for honest and effective health supervision.

ADMINISTRATION OF HEALTH SUPERVISION

Health inspection has had its beginning, with few exceptions, in the medical inspection for contagious disease, administered by the Board of Health. When the broader work of health examination and care has grown out of this, or up about it, the Board of Health usually has had the doctor and the organization to carry on the work more conveniently and economically than the educational authorities. While the inspection for contagious disease will always remain a vital factor in health inspection in schools and must be controlled or sanctioned by the Board of Health, the large work of health examination and care in schools is primarily and essentially an educational interest and task. It must finally, logically, and inevitably be controlled and directed by the educational authorities, but in co-operation with the local health authorities (so far as control of contagious disease is concerned). The exercise of authority in the schools, in relation to all aspects of health inspection, by the Board of Health is not, and cannot be, satisfactory to the community. Dual control by the Board of Health and Board of Education has proved confusing and ineffective.

The tendency in the future will undoubtedly be to unify in the schools the various health interests under the direction of a supervisor of health, or a director of hygiene and physical education.

LEGAL CONTROL

It is probable that in the near future there will be recognition by the law of the right of the state, in the schools, to re-

quire an accurate knowledge of the health condition of school children.

The right of education further to compel by law, if need be, the correction of important defects, will probably be supported by suitable statute. It is vitally important, however, that every other resource for guarding the physical welfare of children should be utilized before the law is invoked, even if the required treatment for the child suffers at times much delay.

There are many reasons why the control of the home over these basic physical conditions of the child should suffer no more interference than seems absolutely necessary. The sympathetic mutual interest in child health, of home and school, offers the most natural introduction to a closer co-operation between teacher and parent which is greatly to be desired and which may affect favorably not only the physical, but the mental and moral life of the pupil and the home.

It is significant that the Wiesbaden system, even under the paternal and autocratic government of Germany, should have achieved its signal success on the principle of educational suasion and without the assistance of coercive measures.

In the physical care of the child by the state through the providing of free lunches, free spectacles, etc., there is greater danger of pauperizing the home than by provisions made for the intellectual or moral needs. If, however, the home cannot, or will not, provide for the serious physical or health needs of the child, there is convincing support for the argument that society should supply such needs, or compel the home by law to give requisite care, rather than allow the child to suffer damaging neglect, "for a weak or a sickly body is a grievous moral disability in so far as by narrowing the range of contact with life it stunts the character."¹⁵

The state cannot afford on economic grounds even, to educate a child who is handicapped by removable obstacles or whose personality or character is being distorted in any preventable manner.

Finally, for the efficient care of the health of school children, it seems necessary that superintendents, teachers, and parents, as well as the school doctors and special teachers in this field, should be educated in the essentials of child hygiene.

¹⁵ MacCunn, *The Making of Character*, p. 55.

SCHOOL SANITATION

School sanitation has to do with making the material environment of the school favorable to the pupils' health. The school building should be the most sanitary structure in the community.

In the past, cathedral, town hall, government buildings, public library, building of college or university, have represented in public buildings the civic pride of the community. To as great a degree, if not a greater, the schoolhouse in country or city should be a model of architectural adaptation to use, and of sanitary excellence. This building for the training of the young may be made in any community, by intelligent planning and without unreasonable expense, a structure of genuine beauty and a source of continual safety, comfort, and pleasure.

The studies of the sanitary condition of schoolhouses made in many cities in Europe, and in this country in Boston, Philadelphia, Buffalo, and several other cities, show the existence of some schoolhouses that defy almost all the well-accepted principles of hygiene, and whose use for the purposes of instruction is a disgrace to civilized communities; and they indicate that however good the best schoolhouses in this country may be, a large part of them are unfit for use because of their unsanitary condition. These investigations have been made usually under the direction of competent experts. Among the evils found are insufficient light, lack of ventilation, air vitiated by odors from outhouses, old-style vaults, gases from the heating apparatus, etc., wraps and umbrellas kept in the schoolrooms, old-style furniture too large or too small for the children, seats placed at a plus distance, the arrangement such that the light comes from the right, practically no attempt at cleaning the rooms, dry sweeping, the use of a feather duster to stir up the dust, dirty textbooks, etc.

Intelligent citizens object to a law that requires children to attend school when so often the conditions are such that a child cannot stay in the schoolhouse without danger to health.¹

The chief considerations in school sanitation relate themselves to a few main essentials: (1) fresh, clean air; (2) sufficient light properly controlled; (3) cleanness; (4) hygienic furniture;

¹ W. H. Burnham, "Health Inspection in the Schools," *Pedagogical Seminary*, Vol. VII.

(5) sanitary condition of materials used by the pupils (to prevent infection); (6) pure water supply; (7) disposal of sewage.

A schoolhouse without an adequate playground is an educational deformity and presents a gross injustice to childhood.

The location of the schoolhouse (with reasonable deference to the geographical center of the community) in anything but the most sanitary and desirable position available is altogether indefensible.

Neglect of anything essential for health in construction, materials, arrangement, and equipment of school building, in relation to the ordinary work of education, and in provision against accidental injuries to life (in fire protection) is a social and civic crime.

GOOD AIR

The importance of fresh, clean air can hardly be over-estimated. Outdoor air is the most valuable tonic known. Of the three life essentials—air, water, food—air is the cheapest and the most neglectfully used. Its very character, its universal diffusion, render it liable to a great range of contaminations. In fact, the different forms and varieties of contamination and vitiation to which air is liable are so subtle and complex that the scientists have not fathomed them all, nor devised forms of apparatus which are capable of measuring some of the important changes which occur. Ventilation is the most important feature in the sanitation of the school.

The evil effects of lack of ventilation are made only too evident by such facts as that the death-rates have been reduced by the introduction of efficient ventilating systems in children's hospitals from 50 to 5 per cent.; in surgical wards of general hospitals from 44 to 13 per cent.; in army hospitals from 23 to 6 per cent.; prison records show reduced death-rates chiefly as a result of effective ventilation, in one case from a yearly average of eighty deaths to one of eight, each period covering the same and a considerable number of years. The annual death-rate among horses in army stables in the German service has been reduced by more roomy quarters and free ventilation from 19 to 1.5 per cent.; and in Boston in time of epidemic the number of horses lost in badly ventilated stables was 5, to 1 in those well ventilated.

A vitiated atmosphere lowers the vitality, increases the susceptibility to, and severity of disease, and decreases the physical working power of the individual; while not producing sudden death, nevertheless, it inevitably shortens life.

One report of the New York Board of Health treating of the primary cause of disease, says "Forty per cent. of all deaths are caused by breathing impure air." Along this same line the Peck Williamson Company's treatise on ventilation quotes Dr. A. N. Bell as follows:

"The depressed state of the organism under the prevailing conditions of badly ventilated schoolrooms not only predisposes to epidemic diseases, but the liability to and the danger of all diseases are intensified, and the vicissitudes of weather, which under favorable circumstances may be encountered with impunity, under these depressing circumstances become dangerous perils; and doubtless much that is attributed to the season of the year supposed to be predisposing to scarlet fever, whooping-cough, diphtheria, and some other common affections of children, is due to the same cause."³

A chief educational reform of the future will be the ventilation of schoolrooms, with direct effect upon the intelligence, attention, and learning capacity of the scholars, quite apart from any question of physical health.⁴

Bad air is one predisposing cause of tuberculosis. Some of the census reports show that mortality from tuberculosis among teachers is 20 per cent. greater than the average among those in other occupations. Children are more sensitive than adults to the injurious effects of vitiated air as well as other unhealthful influences.

When air is bad, this is not under any ordinary circumstances due to increase of CO₂ (carbonic acid gas), nor to diminution of oxygen; nor (according to the latest and best authorities) is the injurious quality due to any intrinsic organic poison, exhaled from the lungs of a healthy person. In an occupied room the oxygen is diminished in the air and the carbon dioxide is increased, but before the oxygen decrease is serious, or the carbon dioxide is increased to an injurious degree, other changes make the air unfit for breathing.

Since the carbon dioxide in the air may rise to 4 or 5 per cent. and higher without exercising any harmful effects, we may conclude that the indisposition which results from long confinement in badly ventilated or overcrowded rooms is due, not to the influence of any poisonous constituents of the expired air, but to other circumstances—e. g. higher temperature, higher humidity, gaseous substances coming from the intestine

³ S. H. Woodbridge.

⁴ Saleeby, *Health, Strength and Happiness*, p. 29.

or from an unclean skin, etc. It is assumed of course, that the ventilation is not so bad that carbon dioxide accumulates in too large quantities.*

The injurious conditions in "bad air" are:

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| a) Excessive temperature | d) Overheating of air (injured by being cooked) | f) Products of combustion from artificial light and from imperfect heating appliances |
| b) Unusual humidity (air too moist or too dry) | e) Dust from floor, blackboards, corners, crevices, moldings, etc. containing in addition to less harmful ingredients, disease germs | g) Gases, dust, and bacteria from neighborhood (streets, factories, etc.) |
| c) Exhalations and disease germs from unclean clothing and unclean and unhealthy human bodies | | |

a) The best temperature for the schoolroom is 68° Fahrenheit. If the temperature exceeds 70° there is depression of vitality and nervous tone, especially if the humidity is unusually high or low, as is often the case. German school authorities have found by experience that it is advisable to shorten school session or to dismiss pupils in warm weather if the temperature rises above 78–80° F.

There should be a thermometer in every schoolroom, and even if there is thermostat (automatic) control, or supervisory control by janitor or engineer, the teacher should keep a record on a temperature chart arranged for this purpose.

b) While the humidity (percentage of moisture in the air) may be excessive and depressing in warm spring or autumn days, the humidity is often too low, and consequently the air is too dry in cold weather in the schoolroom where the school is heated by furnace or steam. Favorable humidity is 40–60°. When humidity drops below 30° the excessive dryness of the air becomes a very unsanitary factor producing: (1) drying of the mucous membrane of nose and throat, with production or aggravation of catarrhal tendencies; (2) increase of nervous irritability with restlessness of pupils; (3) more rapid development of fatigue, with diminished working power of pupils.

The humidity of schoolroom air may be controlled by a humidifier which introduces moisture into the dry air most advantageously

* Tigerstedt, *Textbook of Human Physiology*, p. 345.

in the main supply flue just after the air has been warmed by passing over the steam pipes. This moisture is supplied best in steam which can be controlled by a humidostat, so that the humidity is maintained automatically within certain prescribed limits.

c) Air when overheated loses some of its health-giving qualities in ways difficult to explain, partly at high temperatures by oxidation, and often gains a disagreeable odor from the burning or charring of fine dust particles. The air should never be heated above 100° Fahrenheit.

d) If the pupils in a schoolroom were healthy and clean and wore clean clothing, most of the disagreeable qualities of school air would be eliminated. Much emphasis should be placed on cleanliness of the schoolroom and of those who occupy it.

e) The inorganic particles in schoolroom dust are not very injurious to health under ordinary conditions, but the bacteria in the air may be deadly. These bacteria, out of doors, may lose power to do harm after a few hours, but in the quiet, darker nooks of a room they may retain disease-producing powers for weeks, months, and even years. It is vitally important that the schoolhouse and schoolroom should be constructed so that it will afford the least possible harbor for germs, and it should permit easy and perfect cleaning. The sharp angles and corners should be replaced by cove ceiling, round wall angles and half-round moldings at junction of floor and walls. The door and window casings should be flat, smooth, and rounded at the corners. The irregular moldings required by unsanitary architectural standards which accumulate dust so perfectly should be altogether lacking.

The floors should be of smooth, well-seasoned, carefully matched boards. The seats and desks and other furniture should be models of simplicity, with smooth surfaces and round angles. The features in school construction which are essential to cleanliness and protection of the atmosphere will not detract from desirable artistic effects. The schoolhouse should be cleaned, but never by dry sweeping or dry dusting. Frequent scrubbing is invaluable. Wet sawdust or oily brooms should be used on the floor for sweeping. Damp or oily cloths should be used for dusting. The vacuum system will in time take the place of other methods of cleaning schools as well as other buildings. In disinfection of rooms where cases of con-

tagious disease have occurred, careful fumigation should not cause neglect of sunning, airing, and thorough cleaning.

f) Where artificial light is required, no other alternative need be considered if electric lights are available. Heating appliances should be so arranged that no products of combustion, even from a stove, may gain access to the air of the schoolroom.

g) The schoolhouse should be so located that the air about it is not endangered by the proximity of any source of contamination. The schoolhouse should never be located on made ground, nor in vicinity of marshes, open drains, or sewers.

The best system of heating large school buildings is the combination of direct and indirect methods. The warmed air passes into the room at a temperature of 70° and supplementary heat when needed is furnished by radiators under the windows. When the building is not in use the direct system maintains sufficient heat in the building.

Ventilation in a large building is maintained by fans. If only one is used the plenum is preferable in order that air may be drawn from a favorable point. When the gravity system for the exhaust flue is maintained, where the exhaust flue carries foul air up by the side of the smoke flue, it is desirable to use the wind pump on the top of the exhaust flue on the roof of the building.

In small school buildings, or the one-room rural school, the stove in the room should never be usedunjacketed. By a proper arrangement⁵ of a jacketed stove or simple furnace, with the exit flue running up by the side of the smoke flue and capped by a wind pump, the rural school may have as satisfactory a scheme of ventilation and heating as the most elaborate city school. In all schools outdoor air should be admitted through windows or window ventilators when the weather will permit, and when the street is not noisy. When window ventilation is used for any reason it is always better to lower all windows on one side of the room a little at the top, rather than to depend upon a larger opening in one or two windows, which will be more apt to produce troublesome draft.

The light supply and distribution is a matter of great importance

⁵ Different arrangements of ventilation for rural schools, utilizing similar principles, are described in the School Board Journal, April, 1908, p. 10a and April, 1909, p. 12.

in school sanitation. South and east are the best directions from which to get light. The schoolrooms should be lighted from the left side of the seated pupils. The windows should extend to the ceiling. The glass area should equal one-fifth of the floor area—more than this if windows are shaded by trees or neighboring buildings. Windows should have two sets of opaque shades which roll from the top and bottom of the windows. The windows should be kept clean.

In color, the ceiling should be a light buff or white. The walls should be light green or grayish green.

Difficulties arise concerning school desks and seats in respect to the demands relating to cost, hygienic requirements, and the specific needs of instruction. Little uniformity has resulted in the United States in the use of hygienic school furniture. The flat-topped movable table desks and light movable chairs have proved satisfactory in some schools for lower grades. The pupil should have separate desks and seats which are adjustable in height and for a minus distance. The school seat which represents the most careful study and judgment regarding school furniture at present is that called the Boston school seat.

Certain precautions within the scope of school sanitation are necessary to protect pupils from conveyance of possible infection from one to another. The common drinking-cup is properly and almost universally tabooed. The extent to which it may convey disease from one person to another is almost beyond belief. The chief avenue by which bacteria enter the body is through the mouth. This is quite at variance with the popular idea that most germs are inhaled into the lungs.

The evidence condemning the use of the common drinking vessel upon any occasion whether at school, church, or home is derived from three sources; (1) the frequent presence of disease-producing bacteria in the mouth; (2) the detection of pathogenic germs on the public cups; and (3) the discovery that where a number of persons drank from a cup previously used by the sick, some of them became ill.

Dr. Forbes of Rochester refers to an epidemic of diphtheria in his city which occurred among twenty-four persons and which was traced unmistakably to a common drinking-cup which all the sick had used.

The mortality statistics of the census bureau show that diphtheria, meningitis, bronchitis, tuberculosis, pneumonia, and grippe, all of which are

likely to be acquired by the use of the common cup, are responsible for nearly 400,000 deaths annually in the United States.

The introduction of bacilli into the body through the uninjured wall of the digestive tract, anywhere from the mouth downward, is the chief mode of infection with tuberculosis.*

The common drinking-cup should never be used in school, at home, or elsewhere. The drinking-fountain for schools is thoroughly sanitary and the best arrangement where there is running water. The system of individual drinking-cups is satisfactory when the cups are kept in a proper cupboard, covered to protect them from the dust, and under the supervision of the teacher. Individual drinking-cups should never be kept in desks of pupils.

The common towel should never be used. The best solution of the towel problem comes in the cheap, tough paper towels which are destroyed after being used once.

Pens, pencils, and books should be used as individual school property. The slate is not to be tolerated. Books should be disinfected before they go into the possession of another pupil. Molding clay should not be used by a second pupil in the lower grades. It cannot be disinfected and used again. The following lists embody important and practical suggestions regarding hygienic and sanitary habits for school children:

HEALTH "DON'TS" FOR SCHOOL USE[†]

Don't pick the nose; always carry a handkerchief.

Don't wet the fingers with saliva in turning the leaves of a book.

Don't put pencils in the mouth or moisten the point with the lips. Keep the point well sharpened.

Don't wipe pens in the hair.

Don't put pens in the mouth.

Don't put anything in the mouth except food and drink.

Don't "swap" candy, gum, whistles, or anything that is intended for the mouth.

Don't kiss upon the lips; kiss the forehead or cheek.

Don't allow the finger nails to become long or unclean; or neglect the teeth.

Don't face toward another person when coughing or sneezing.

* Davidson, *Death in School Drinking-Cups*.

† *American School Board Journal*, May, 1908.

SIX HEALTH RULES^a

1. Fresh air and sunshine are necessary to good health.
2. Night air is as good as day air, and in cities where there is much dust, better.
3. Eat little fried food, pastry, cake, candy, and sugar.
4. Wash your hands before you eat.
5. Never lick your fingers when turning pages or counting money.
6. Avoid spitting, because it spreads consumption and other diseases.

In country districts where there is a local water supply for school use, great care should be exercised to make sure that it comes from a pure source. In districts where there is no water-carriage system for sewage the problem of arrangement for school toilets requires special attention. The privy vault should never be allowed on school grounds, even in remote rural districts. The water-tight, cemented cesspool, even, is not wholly defensible at the present day.

In small (one-room) rural schools the dry earth closets will satisfy sanitary requirements, but they need intelligent care and should always be located at least forty to fifty feet from the school-house.

It is desirable that the toilets should be under the schoolhouse roof, and this may be accomplished in rural or small village schools where there is running water, by the use of the septic tank for sewage disposal.

^a *American School Board Journal*, June, 1908 (Board of Education, Wilkes Barre, Pa.).

HYGIENE OF INSTRUCTION

Modern education attempts to give the pupil cultural training in preparation for citizenship, and for social and industrial efficiency. Characterized at different times by these and other guiding motives, the work of the schools has gone on through the ages. During more recent times spasmodic attempts have been made to so arrange this school process that it would not, while attempting to accomplish its ambitious and worthy purposes, be harmful to the biologic values which the pupil represents. The hygiene of instruction considers the effects of the educational process itself upon the health of the individual, and would so control and adjust the various factors which collectively make up school work that the pupil's health will not be injured while he is being prepared for future usefulness. That the process of education is always carried on without danger to the pupils' health, even the school men themselves sometimes doubt.

At a recent conference in New York City on the physical welfare of school children, a school principal declared that our present curriculum is manufacturing more physical defects every year than school physicians and school nurses can correct. To the surprise of the laymen present, the school men were of one mind as to the havoc wrought by school life upon the physical and mental energy of the child. We were told that eyes are weakened, if not ruined, by glazed paper, small type, lines of wrong length, unsteady or dazzling light, or prolonged concentration. Dry sweeping fills the air with dust, and combines with bad ventilation, lack of water, and dust-raising physical exercises, to supply conditions that favor the growth of disease germs, more particularly the tubercle bacilli. Seats and desks deform the spine and hips, and cramp the lungs. Required home-study deprives the child of play and sleep and accentuates the effects of harmful school environment. Highly trained teachers explain the composition of air in an atmosphere often more poisonous than that of the average city sweatshop. Boys and girls unable to breathe through the nose because of adenoids and enlarged tonsils are deprived of recess for not being able to describe the passage that leads from the nose to the windpipe and lungs. Children fortunate enough to be physically able to meet school requirements are handicapped in their studies, and for that reason reduced in industrial

efficiency, because they must march side by side with children suffering from removable physical defects.¹

In the past, education has been treated largely as the process of teaching various subjects to children. It was deemed essential that the teachers should know a great deal about the subjects which they were to teach and something about child-psychology. With the evolution of education and the theory related to it, more importance is being attached to the knowledge and supervision of the child-organism. It seems probable that in the near future, as much relative attention will be given, in the training of teachers, to the study of the nature and character, physical, intellectual, and moral, of the child as to the study of his environment and its details, by reaction to which he will be educated.

The understanding of child-life which is necessary to enable the teacher to judge the effect of schooling upon the pupil, must include not only knowledge of child-psychology, but also of child-biology and child-physiology.

First we must know what man is, for man is the far-off goal of all our pupils' development. Then we must discover how a baby grows into manhood, and just what Nature would have us do for him at every age and stage. Only when we have discovered the characteristics of every stage of childhood can we attempt to form a system of education, suited at every stage to gain the co-operation of Nature and thus train men and women of growth and balance, of health and vigor, power and efficiency.

The balance of organs in the child's body, in other words, his constitution in the literal derivative sense, is quite different at different epochs. The great mental changes during youth and early manhood are familiar to us all. The physical changes during childhood and early youth are equally great, but often pass unnoticed or poorly understood. Yet these changes modify or cause certain traits in the child.²

The training which the child is to get should be what is essentially designed for him in his unripe condition, for it cannot be similar to that of an adult. The child is the immature animal; so far different from its fully grown model as almost to want the name of "different creature."³

¹ W. H. Allen, "Broader Motive for School Hygiene," *Atlantic Monthly*, Vol. CI, 1908.

² Tyler, *Growth and Education*.

³ Oppenheim, *Development of the Child*.

As educators have come to realize how different the child is from the adult—different not alone in size, but in structure and function, in relative proportions, in balance of organs, in constitution, in power of endurance, in fact, in every element which is concerned in the making-up of the final stage of maturity—it has become evident that this knowledge must be fundamental in judging what will be best for the child.

Consideration of the manifold and often subtle organic changes in the comparative development of childhood would be too long and technical a task at this time, but careful study of this relatively new and important phase of child-study will well repay any teacher who wishes to deal fairly and justly with the children who are being trained.

Without attempting any complete survey of the many difficult and intricate phases of this important field, brief reference may be made to some of the fundamental elements of the problem.

I. The pupil should present himself at school in the morning in the best possible condition to profit by the process of instruction. Two factors of daily living are prominently related to the pupil's condition and therefore are of direct importance to the school.

HOURS OF SLEEP REQUIRED AND MENTAL WORK PERMISSIBLE FOR CHILDREN OF DIFFERENT AGES

Age	Hours of Sleep	Time in Bed	Hours of Schoolroom and Other Mental Work
5- 6.....	13	6 P. M. to 7 A. M.	3
6- 8.....	12	7 P. M. to 7 A. M.	3½
8-10.....	11½	7:30 P. M. to 7 A. M.	4
10-12.....	11	8 P. M. to 7 A. M.	4½
12-14.....	10½	8:30 P. M. to 7 A. M.	5 to 5½
14-16.....	10	9 P. M. to 7 A. M.	6
16-18.....	9½	9:30 P. M. to 7 A. M.	7
18-20.....	9	10 P. M. to 7 A. M.	8

a) Rest and sleep after the previous day's activity. If the night's rest has not been sufficient to restore the organism completely after the exertions of the previous day, the child begins the day partly tired out, with crumpled or haggard nerve cells, quite unfit for normal, satisfactory responses to stimuli. If the child continues in this partially tired-out morning condition, there is a condition of chronic nervous exhaustion of some degree at least, and this will

prevent good school work, while it renders the child more susceptible to disease and may seriously interfere with physical, mental, and even moral growth and development. Many school children do not spend enough hours out of each twenty-four in bed in a room which is as widely open to the outdoor air as wide open windows will permit.

Nothing can make good to the individual the loss entailed by deficient sleep during childhood.

b) The child as a preparation for the day's programme in school, should eat an unhurried, nutritious breakfast, and get to school on time, without rushing. The child machine must be properly coaled up before beginning the work of the day. If the pupil does not sleep well, and does not eat a good breakfast, these faults should be corrected.

II. The school programme should be arranged for the class and adapted so far as necessary to the individual pupil with reference to genuine fatigue, which means quite normally a lessening of working power as the day proceeds. Fatigue resulting from a reasonable day's activity disappears after a sufficient night's rest.

Abnormal fatigue, or what Dr. Cowles has significantly called "pathological fatigue" may be due to many things. Overwork is commonly supposed to be one of them. It may be said, however, that in children this is not very frequently the case. Results usually attributed to "studying too hard" are owing very directly to something else. Much more frequently, dangerous fatigue is the result of unhealthy confinement within doors, or is owing to unwholesome shocks and puzzlings, and confusions, and conflicts of impulses resulting from the imposition of scatter-brain notions of teaching and discipline—imposed much too fast for the child to grow to, or even to comprehend.

Children who, through heredity or accidental stress, are unusually liable to pathological fatigue, should have special provisions made for their especial educational needs. Every large school should have the services of an expert teacher who has been technically trained for this particular work.⁴

To sum up: Fatigue in the schoolroom may be largely decreased, if not reduced to the minimum, by more frequent use of rest periods; by arranging stronger contrasts in the daily programme, as well as securing a wiser adjustment of difficult subjects to the best working hour; by patient and

⁴ Smith Baker, "Fatigue in School Children," *Educational Review*, January, 1898.

wise training of pupils into better habits of study; by a better utilization of the doctrine of interest; by lessening nervous tension in the schoolroom; and by wise use of play under supervision.

There is a vital distinction between fatigue (*Ermüdung*) and weariness (*Müdigkeit*). A child at play may become fatigued, but never weary of his activity; a boy engaged at work in which he takes no interest may become so weary in fifteen minutes that he can accomplish nothing. . . . Tedium produces the feeling of weariness which is distinctly different from fatigue itself.⁵

It should be remembered, however, that a feeling of weariness may quite normally come on with increasing fatigue, though the former is by no means a constant and accurate index of the latter.

Ribot says: "Fatigue in every shape is fatal to memory." Every teacher, therefore, should be familiar with the indication of fatigue, with the conditions which most rapidly induce it, and with the means that may be employed to avoid, to reduce, or to overcome it, so that the maximum of effort may be attained by the minimum expenditure of energy.

Our psychologists tell us that with the normal pupil mental fatigue in school work is quickly induced and also quickly passes away. Mental efficiency, or the increments of skill gained through mental training, is much more permanent in its character and is not soon lost. If this be true, in order to attain the highest possible maximum mental efficiency, with the greatest economy of effort, provide working periods with more frequent rest periods, and thus secure through this power of the mind to recuperate rapidly, an almost continuous high state of mental vigor. . . . The mind, instead of being as we supposed like an old-fashioned sensitized plate of the photographer, which required a long exposure, is, after all, more like the highly sensitive plate of the snapshot camera. . . . We need, especially in the lower grades, to bring in these more frequent rest or exercise periods, believing that the increments of power gained from mental activity will not be dissipated through such slight interruptions, and that efficiency of public school work will be greatly increased as well as relieved of much of its present drudgery.⁶

III. The eyes of school children should be protected from excessive strain, especially in the lower grades, by every possible means which ingenuity and forethought may devise. Abnormalities of

⁵ H. E. Kratz, "How May Fatigue in the Schoolroom Be Reduced to a Minimum?" *Proceedings of the National Education Association* (1899), p. 1090.

⁶ *Ibid.*

the eyes which are either partially caused or aggravated by school work increase from the lower to the upper grades.

Indeed, extensive examinations of eyes of school children, in addition to showing the small proportion of normal eyes, have shown that a very large proportion present an unhealthy appearance, or even the beginning of disease of the deeper, more important structure of the eye. The least trouble was found in the lower grades, markedly increasing toward the higher, as did also the average degree of error, proving unquestionably the effect of the educational systems on the eye.⁷

Proper care of eyes in school work necessitates: (*a*) very little fine work for young children; (*b*) books with large, distinct letters and figures printed on unglazed paper; (*c*) use of large characters on clean blackboards; (*d*) use by pupils of coarse writing pens or soft pencils (slates should never be tolerated).

IV. Recess and frequent short intervals of rest and relaxation between periods should be preserved in the arrangement of the school programme at whatever cost of convenience, or difficulty of supervision.

Kraepelin, Friedrich, and others have observed that pupils work best when school sessions are interspersed with short periods of rest.⁸

School instruction is for the mentally and physically growing child *work*, and consumes his mental energy. If it becomes overwork, it checks his mental and physical development. It is shown by these and other experiments, and insisted on by many educators, that short intensive study hours are better than long ones. Especially with children in the lower grades, fatigue increases very rapidly with the continuation of instruction. The child should be granted a recess of from eight to fifteen minutes after every sixty minutes, the time to be spent in attention to bodily needs, to rest, and to the taking of nourishment. The severer studies should find a place in the earlier morning hours. Whether there should be any afternoon session at all is questionable. At any rate, only light exercises, such as penmanship, singing, etc., should be permitted in the afternoon.⁹

It should be remembered that formal gymnastics rank with mathematics among the most rapidly fatiguing of all forms of instruction.

⁷ S. T. Easton, "Public Schools and Eyesight," *Education*, February, 1901.

⁸ O'Shea, *Dynamic Factors in Education*, p. 284.

⁹ Patrick, *Studies in Psychology*, Vol. I, p. 80.

· V. The school schedule should not require formal or artificial tests and examinations which seriously disturb the nervous state or health of the pupil, either at the time of the test, or by a period of abnormal nervous tension during preparation for such tests.

There is another habit of our school which I have frequently had occasion to deprecate. I allude to the system of term examinations in vogue in many schools for the purpose of determining the class standing of the pupils. The procedure calls into play in a most extraordinary manner the ambition of the pupils, for the reason that their promotion is contingent upon their ability to pass it successfully. For weeks before the expected trial the hours of work are prolonged, the rest interfered with, the child becomes nervous and irritable, and the tone of health impaired. The eyes often suffer seriously under the baneful influence of this prolonged strain. I have very many times been annoyed and disappointed over almost sudden relapse of choroidal disease, in patients under observation, often with an increase of near-sight indicating a distention of the eyeball, brought about by the stress of work required in preparation for the examination at the close of the school year.¹⁰

VI. Promotions by subjects with a relatively loose classification of students in grades or classes are much more favorable to the health of pupils than the traditional promotion of an entire class at the end of the year or half-year. This is particularly important for girls in the upper-grammar and high-school grades, when the promotion tests are more severe and "caste feeling" as related to standing in class, and promotion with class, is very pronounced. While it often happens that the desire to keep up with the class may serve as a useful incentive to do good work, still it frequently operates disadvantageously to the individual pupil. Not infrequently the high-school girl, whose health at puberty demands a partial programme, sometimes at menstruation several days' absence, or perhaps the dropping out of school for a year, suffers such chagrin and unhappiness that parents and teachers allow her to struggle along, even though she may suffer serious and permanent injury. Educational organization should be elastic enough to provide for the needs of individuals—within reasonable limits—as well as for the training of typical groups.

In fact the normal child should not be the primary consideration of any

¹⁰ S. D. Risley, "Defective Vision in School Children," *Educational Review*, April, 1892.

system of promotion. The non-normal child, who belongs to the majority, or at least to a large proportion, is crying for recognition. He must be given the opportunity to travel his own pace. Even the normal child of one year is not necessarily the normal child of another year. The conditions which produce retardation or advancement are several, and these may vary. The child's own growth rhythms, for example, may put him in a condition to do normal work one year, and less or more than normal work another year.¹¹

VII. The teacher is the most important factor in relation to the hygiene of instruction.

a) Higher standards of health must be demanded of the teacher if she or he is to exert an influence upon the sensitive, plastic child which is salutary and altogether wholesome.

b) The teacher must be protected from overpressure and chronic fatigue through: (1) personal rational habits of living; (2) limitation by school authorities of the teacher's duties so that health preservation is possible.

Various aspects of the hygiene of instruction have been suggestively summed up in the conclusion of two writers:

1. The mental effort of which the child is capable is primarily connected with physical activity and with sense perceptions.

2. The physical activity most needed by developing childhood is not found in formal and artificial systems of exercise, but in plays and games, in the various occupation imitations of childhood, in gymnastic games, and in the progressively difficult demands of well-directed manual training. These present mental as well as physical problems, fully adapted to the child's stages of development, and insure adequate mental and physical growth up to the age of eight or ten.

3. The conditions favorable to the mental development of a child seven years of age are not found in arithmetical processes, but in concrete number relations; not in the science of language, but in its use; not in the use of symbols, as in reading, nor in the efforts at fine motor co-ordinations, as in writing with pen or pencil, but in drawing and picture writing on the black-board (in games and industrial training) and in the fascinating study of plants and animals.

4. The wholesome development of the child's nervous system depends upon maintaining his interest in school work, fostering and directing his spirit of inquiry, and satisfying his love and need of activity. Substitution

¹¹ Burk, "Promotion of Bright and Slow Children," *Educational Review*, March, 1900.

and suggestion must take the place of prohibition and repression. The true discipline is the self-control of interest.

5. The teacher must not be misled into demanding logical sequence of continuity from the child. Superficiality is both the safeguard and the stimulus of childhood.

6. Not less than one-half of the school time of the primary-school pupils should be devoted to physical activity in its various aspects, and the remaining time should be devoted largely to nature-work, drawing, oral descriptions, and oral reproductions.

7. The child's increase of mental power is not in proportion to the mental effort he is forced to make, but is largely determined by natural physical growth.

8. The final test of primary-school work must be—is it joyous? does it give full scope to the play impulse?¹²

The physical organism, regarded from one standpoint, is a contrivance for generating energy needed for the support of all activity, whether physical or mental. When the stock of available energy in the organism at any time is depleted beyond a given point then serious disturbances must ensue. In a fatigued condition one cannot accomplish as much ordinarily as when he is refreshed. His perception, his memory, his reason, are rendered less keen and ready and accurate; his endurance in labor of any sort is lessened; he cannot perform tasks demanding the finest and most exact motor co-ordinations. Some pupils will become unduly tense in all their actions, while others will grow lethargic and indifferent. Restlessness and irritability will take possession of a schoolroom under such conditions.

If one is to attain the greatest efficiency, he must use his energy economically; he must avoid all practices that squander his resources. Needless motor tensions drain off the vital forces without accomplishing anything, and they must be reduced to the minimum. And first of all by changing the state of mind which begets them. Worry, fear, self-consciousness, over-scrupulousness, dissipate energy. Teachers especially need to bathe their spirits freely in the best books, the best art, the best music, and the best social life. They should keep an eye on their pupils, too, and seek to encourage in them habitual attitudes of courage and hope and joyfulness. It should be the aim to do one's work without wasteful muscular tensions. Usually tasks requiring very fine adjustments entail waste, and they should not be undertaken when unnecessary. It is the teacher's duty to banish from the schoolroom all implements, in the management of which there is demanded precise co-ordination, where coarser activities would

¹² Fitz, "Hygiene of Instruction," *Proceedings of the National Education Association* (1898), p. 545.

answer just as well. Very fine writing, or sewing or weaving and the like should be abolished. All the equipments of the school, especially the seats, must be chosen with the end in view to reduce to the lowest point the waste of nervous energy in pupils. Finally, well-poised, calm-voiced, and calm-featured teachers, who are at the same time positive and definite and, in short, *strong*, are the most important pieces of apparatus that can be placed in any schoolroom, regarded from the standpoint of the conservation of the nervous energy of pupils.

In arranging the daily programme it should be the aim to have pupils give concentrated attention for brief periods only to the work in hand. One hour of real hard work is worth three of mind-wandering, and it is far more conservative of vital forces. Some account should be taken of the "course of power" in the day, and an effort should be made to get all school work done while the energies are at flood tide. Especial pains should be taken to so arrange the programme that it will not be necessary to hold pupils to their tasks when the waning of their powers leads to relaxed attention, so that they fall into frequent errors, and thus put themselves into an unhappy relation toward their environment.¹⁸

¹⁸ M. V. O'Shea, *Dynamic Factors in Education* (1906), p. 297.

HEALTH INSTRUCTION

This is one of the most perplexing problems in education today. No phase of instruction seems more important than to teach the child how to live in a healthful manner. No subject is taught, on the whole, so unsuccessfully. In considering the traditional and present methods of teaching physiology and hygiene, several purposes appear to have exercised varying degrees of control over such teaching. These purposes may be classified thus:

a) To teach these subjects—physiology and hygiene—as branches of science, with observance of methods employed in other branches of science and with applications of this knowledge to hygiene when such applications appear to be feasible. The teacher possessing this as the main motive, has ordinarily had more training in pure science than in hygiene, and the teaching shows corresponding distribution of emphasis.

b) To give instruction in facts and principles of hygiene on a basis of as much anatomy and physiology as seems necessary to support the hygiene teaching. This kind of teaching is often as theoretical on the hygienic side as would be given with the first-named purpose, and frequently the scientific basis is inaccurate and generally defective.

c) To provide the temperance instruction required by law in the various states and to supplement such instruction with the additional material contained in the required textbooks. This represents the prevailing motive and method in the teaching of physiology and hygiene in the schools of the country. The teaching is done in obedience to law, often in a perfunctory manner, without much interest on the part either of teacher or pupil and with very little apparent after-benefit, so far as one may judge from the impressions recalled in after years by those who received this type of instruction.

Now, nothing can be more readily shown than that in the case of most individuals the knowledge of the ill effects of unhygienic activities does not in itself result in the formation of hygienic habits. . . . We eat welsh rarebit and pumpkin pie, in spite of nightmare and nervous indigestion. It

takes something more than physiology—more than toothache itself—to make children use a tooth-brush after every meal. And just as certainly, boys who do not stand aghast at the abasement and the menace of the drunkard, will not be prevented from drinking solely through knowledge of the various ill effects of alcohol on the heart and nervous system.¹

An investigation of the methods and effects of the conventional teaching of temperance, physiology, and hygiene in public schools, which was conducted by a special committee of the New York State Science Teachers Association showed that in a moderate number of schools where the instruction was given in an earnest fashion by teachers who were alive to the reasonable possibilities, some satisfactory results were obtained.

d) To inculcate in pupils habits of healthful living in relation to personal, home and community life, through the study of sanitation, bacteriology, simple facts of hygiene, and by encouragement of wholesome play, athletic ideals, a spirit of reasonable personal ambition, and social helpfulness. This method and approach have been utilized all too rarely, but have when used been productive of splendid results.

On the whole and up to the present time, the teaching of hygiene in the schools has been inadequate and unsuccessful. The following reasons are proposed to explain in part this lack of success:

1. The teachers generally lack conviction regarding the value of the instruction as ordinarily given and, partly in consequence of this, have little if any interest in such teaching. There is abundant reason for this lack of conviction and interest as the methods of teaching are felt to be faulty and the effects insufficient to justify the time and effort given to the subject.

2. The teachers are too frequently wanting in the practical personal standards and habits of individual hygienic living which are essential as the primary elements to give authority and power to such teaching with reference to its applications. The effective teacher of this subject must give expression in personality and conduct to the principles of hygiene which are being taught.

3. The teachers in the majority of instances do not possess the information, the scientific and practical knowledge needed for the

¹ Yocum, "Teaching of Hygiene in Elementary Schools," *American School Board Journal*, November, 1908.

clear presentation of material which should be wisely selected and adapted to the needs of the pupil at the time.

4. Teachers give as one reason for neglecting hygiene, that they are often compelled to struggle with a curriculum, which requires more than they are able to teach and more than pupils are able to learn in the time allowed. While an overcharged curriculum may explain, it surely does not justify, the violation of law and the dropping of hygiene from our school curriculum. If there is any class of citizen who should teach and practice respect for law as law, it is the teacher. Parents, school directors, county and state superintendents, university presidents, social workers, owe it not only to themselves, but to the American school teacher, either to repeal the laws that enjoin instruction in hygiene or else so to adjust the curriculum that teachers can comply with those laws. The present situation that discredits both law and hygiene is most demoralizing to teacher, pupil, and community. Many of us might admire the man teacher who frankly says he never explains the evils of cigarettes because he himself is an inveterate smoker of cigarettes. But what must we think of the school system that shifts to such a man the right and the responsibility of deciding whether or not to explain to underfed and overstimulated children of the slums the truth regarding cigarettes? If practice and precept must be consistent, shall the man be removed, shall he change his habits, shall the law regarding instruction in hygiene be changed, or shall other provision be made for bringing child and essential facts together in a way that will not dull the child's receptivity?

Teachers are made to feel that while arithmetic and reading are essential, hygiene is not essential. Whatever may be the facts regarding the relative value of arithmetic and hygiene, whether or not our state legislators have made a mistake in declaring hygiene to be essential, are questions altogether too important for child and state to be left to the discretion of the individual teacher or superintendent. It is fair to the teachers who say they cannot afford to turn aside from the three R's to teach hygiene, to admit that they have not hitherto identified the teaching of hygiene with the promotion of the physical welfare of children. Teachers awake to the opportunity will sacrifice not only arithmetic but any other subject for the sake of promoting children's health. They do not really believe that arithmetic is more important than health. What they mean to say is that hygiene, as taught by them, has not heretofore had an appreciable effect upon their pupils' health.²

5. The present teaching of physiology and hygiene involves too many facts of anatomy and physiology. It is doubtful whether any teaching of anatomy and physiology as such is advisable in ele-

² W. H. Allen, *Civics and Health*, p. 4.

mentary or grammar grades, and very little if any is needed in the high school. Not until the student is of college age, at least, is the study of human anatomy and physiology beneficial to the individual, except in the presentation of very general facts and principles relating to the body's construction and function which may strengthen the argument in support of hygienic living. That is, the claim here is made that nowhere in the school should these subjects be taught systematically as branches of science. Much of the material of instruction in physiology and hygiene is uninteresting, difficult, and beyond the clear comprehension of the pupil. One author of an elementary-school textbook very frankly entitles his first chapter "Dry Bones." Educators know that hygiene is required by law. They assume that it is an important subject and that the child must know the anatomy and physiology to understand the hygiene. And the children try to memorize dry details of physiology and to understand facts and principles which are too complex for them. The most absurd and ludicrous records of school tests are made up by the ridiculous, grotesque, not to say inaccurate answers to questions in human anatomy and physiology. And the same types of answers result from all kinds of teaching, indicating that something is inherently wrong in the materials and methods of teaching. Much of the description in textbooks is beyond them, and many of the illustrative cuts are not understood. In addition to the foregoing, the direction of the pupil's attention to the structure and function of his own body results often in disturbed self-consciousness; is pedagogically unsound; and contributes little to hygiene teaching. On the contrary, it may directly interfere with the desired hygienic application and antagonize the pupil in relation to the whole subject. The psychology of physiology teaching has not yet been worked out in any satisfactory fashion.

6. The instruction in this branch of education is too largely theoretical, too little related to, and judged by, the conduct of the pupils. The tendency now throughout the schools is to value mere information less and to esteem more highly useful reactions and habits. In this field most of all, unless it be in the moral field which it is impossible and undesirable to separate from the broadly hygienic, it is fundamentally important to judge results of hygiene

teaching by the practical application in actual and immediate living.

7. Too much emphasis in hygiene is directed to the personal health of the pupil, too little to the health and well-being of members of the home and of the community. The child is not interested in his own health, nor should he be except as he realizes in a rather vague way that "to be well and strong" enables him to do things that seem worth while, to help the members of the household, the teacher and other friends, to be useful generally. Actual answers to questions concerning health obtained recently in different elementary grades indicate the direction of pupils' interests. In the first four grades the following questions elicited the answers quoted:

a) *What does it mean to feel well?* The word happy was used in nearly all of the answers. These answers were given: "glad"; "feel like doing things"; "nice"; "not cross"; "laughing all the time"; "running and jumping."

b) *Why do you wish to feel well?* Nearly all said: "So I can play and go to school."

c) *How can you become big and strong?* "Bathe"; "Eat good food"; "Drink milk"; "Climb a lot"; "Mind Doctor (school physician) and Miss (gymnasium teacher)."

d) *How can you help others grow big and strong?* "Take the baby to the Park every day"; "Make your small children to wear rubbers when it rains"; "Don't let your father smoke in the kitchen." One little first-grade girl with a strong instinct for self-preservation, said: "I wouldn't help other people, I might catch it myself."

In the fifth grade the following questions were asked: (a) What does health mean to you? (b) Why do you want to be well? (c) How can you become well and strong? (d) Name the persons who help you most in keeping well and strong.

Nineteen papers were collected. The idea of "feeling well," "happy," "strong," "bright," "lively," "not sick," was expressed fourteen times in connection with the first question. One child said, "Health makes you feel like going some and not to feel lazy." Another, "To feel well makes you feel like being out of doors," and another replied, "Health is when you are in danger of Tuberkolosis."

To the second question fifteen pupils gave emphasis to the fact

that they want to be well in order "to go to school," "to be out of doors," "to be able to see friends," "to romp in the park," "to chase with my dog." One said, "I want to be well for when I am sick I have pains and that makes my mother feel sad." Another answered, "I want to be well for then you don't have to pay Dr.'s bills." This economic value of health was repeatedly expressed by the East-side boys.

To the third question, the advice given for maintenance of health was related generally to proper food, clothing, exercise, and sleep. Of the person who helped in keeping them well and strong, mother held first place with the doctor a close second. With the East-side boys this order was reversed.

In the sixth grade the questions asked were practically the same, with the addition of: "Is it better to play out of doors or in the house and why?" These children gave the same emphasis to health as a means of happiness. Two said, "Health is happiness." All gave expression to the general idea that being well means out-of-door freedom and ability to do things and to go to places. Practically the same health suggestions were given with strong emphasis upon exercise. This was especially evident in the papers written by the East-side boys. One boy said, "Exercise two times a day sometimes," and another, "Sure it is better to always play out of doors."

The question regarding the care of others brought some interesting answers: "If I am sick and it is contagious, not to let others get it"; "do for others like helping to get a milk station for babies"; "Be careful about spitting on floors"; "Tell people to sleep with windows open"; while one child surprises us with this store of "Don'ts": "Don't put snow down their backs; Don't breathe in other people's breath; Don't let somebody eat from your plate or drink from your cup."

These children were unanimous in the decision that mother helps more than anyone else in keeping them well. Father with the ability to pay bills was mentioned three times, the doctor, eight times, the street cleaner, janitor, milkman, and policeman were also mentioned. One child said, "My father helps me most, he keeps me strict and clean," while an analytical youth replied in this manner: "Mother (she cares for me); Father (the same); Milkman (because of pure

milk); Policeman (because of law and justice); Teacher (because of education)." All agreed it is better to play out of doors than in the house.

In the seventh grade the questions were the same in spirit with the addition of, "In order to be well and strong what are some of the things necessary to both plants and animals?"

To the first question all responded freely giving the same emphasis to the happiness side of life. One wrote: "Health means happiness, comfort, joy." In reply to: "Why do you wish to be well and strong," the answers were similar to those received from the fifth and sixth grades, only they were more definitely and maturely expressed. Among the answers were, "I want to be well to have plenty of schooling and games"; "I want to be well so I can play basket ball tonight"; "I want to be well to have a good time, be happy and as God wants me to be." The health suggestions were much like those noted before, pure food, exercise, cleanliness, being emphasized. The question regarding the care of plants brought out the ideas of similar care—they should, like a person, be bathed, given good food, air, and sunlight.

In the eighth grade the pupils stated that health means "success," "joy," "strength," "pleasure," "rosy cheeks," and "happiness." They want to be well that they may "have fun," "go to church, school and parties," "gain weight," and "not be a drudge to other people." Their health suggestions are confined mainly to the fresh-air exercise problem, while those for helping others are rather more surprising: "Don't spit in open places"; "Be clean at home same as at school"; "Keep yourself well; that will help others"; "Behave so you don't put an extra strain on your teacher"; "Don't pet anybody; come to school without an examination."

8. Another reason for unsatisfactory results in hygiene teaching is that too much attention is given to disease and not enough to health. This has been the case in much of the temperance instruction. Children may sometimes be instilled with wholesome fear by presentation of pathological effects of alcohol and narcotics. More frequently, however, if not depressed by disease pictures, they consider facts with wonder, sometimes with amusement, often with skepticism and indifference, but the constructive health influence would be much better gained by pointing out the domestic, social,

and economic evils resulting from intemperance and giving strong emphasis to ennobling ideals, or to positive standards of health, and power to do.

9. The present textbooks are on the whole quite unsatisfactory, because they contain too much anatomy and physiology with illustrations which are either not understood or too largely negative in effect. Very few textbooks contain enough sanitation, public health, bacteriology, practical individual, social, and industrial hygiene.

10. With the present prevalent method of teaching physiology and hygiene as a branch of science, error is made in teaching this subject in the first year in high school, before the pupil has had natural science, physics, chemistry, and zoölogy, which usually come in the later high-school years.

CONSIDERATIONS RELATING TO THE EFFECTIVE TEACHING OF HYGIENE

I. Health teaching includes two factors: (*a*) hygiene—the healthful conduct of the individual; (*b*) sanitation—the maintenance of an environment favorable to human health. Both aspects should be kept properly balanced and interrelated, in the educational progress of the child. No more human anatomy and physiology should be taught in elementary or high school than is necessary to make clear hygienic application, and this is very little indeed, much less than is taught now throughout the schools of the country. The study of his own body or mind by the pupil through systematic and detailed analysis should not be attempted until the individual is nearly or quite mature. Too early study of this kind not infrequently leads to morbid self-consciousness which may involve the body as well as the mind.

The power to concentrate attention upon oneself is a sign either of a diseased body, a diseased mind, or a highly trained mind.

The problem of health is not how to have a healthy stomach, but how not to know that you have a stomach, which comes to the same thing. The maintenance of health depends not upon continuous attention to bodily needs—which will wreck the health of the strongest—but on the formation of healthy habits and the value of such habits is that, once formed, they can be left to the subconscious mind, whilst the conscious self instead of feeling itself forever chained to the body of this death can dance in its fetters.⁸

⁸ Saleeby, *Health, Strength, and Happiness*, p. 13.

The cellular structure of the body, as bearing upon exercise and exhaustion; the rapid multiplication of microbes and bacteria in relation to antiseptic and prophylactic treatment; the menace of cats, house flies, and mosquitoes, and the quick souring of milk; precautions necessary to the prevention of the spread of tuberculosis; oxygen as a purifier of the blood; the cubic air space that should be allowed for each individual indoors; the principles of ventilation; the general functions of heart, lungs, arteries, and veins without regard to particular valves and veins; the relation of crookedness, decay, and absence of first and second teeth to digestion, and the precautions necessary to protect their enamel; tests for common food adulterants and the laws regarding pure foods and public health in general; the relation of overfeeding and overexercise to mental torpidity; marked symptoms of dangerous diseases for which a physician is needed; the usual remedies for familiar forms of sickness commonly given home treatment; all prophylactic precautions possible to the masses—if these and other facts directly bearing upon healthy habits are associated with them through continual repetition and persistent practice, little time will remain in the elementary school for the details necessary to the mastery of physiology as a science.

Since hygiene means habit, the general basis for the grouping of hygienic data should not be anatomical and physiological structure, but the activities that make health, whether they are personal, social, or political. For example, all useful knowledge bearing upon the circulation of the blood should not be centered about the heart and lungs, but rather all facts likely to serve as a stimulus to the breathing of fresh air should be grouped together or all that tend to result in cleanliness of person and environment.⁴

There is a growing body of conviction in the minds of many that the illustrative material for health instruction should be taken from actual life, even if this involves certain morbid conditions in the environment, but that butcher-shop specimens should never be used, nor should dead creatures and dissections of animals in the laboratory be employed in the teaching of physiology and hygiene.

II. Teaching hygiene and sanitation in the schools should aim at direct inculcation of health habits as much as at the imparting of knowledge concerning hygiene and sanitation. School credit for hygiene teaching should be based partly and primarily upon the extent to which the pupil lives hygienically. Credit in hygiene is now included in the requirements for graduation from the New

⁴Yocum, "Teaching of Hygiene in the Elementary School," *American School Board Journal*, November, 1908, p. 4.

York public schools and also for promotion from grade to grade. The first item in these requirements reads:

Practical hygiene.—The effort and success of the student to follow out the instructions in hygiene on matters of cleanliness of the face, and fingernails, mouth, teeth, hair and clothing, should form the greater part of the item.

III. Hygiene should be taught continuously throughout the school life of the child. Such instruction in the elementary school can best be given, not through a special course in hygiene, but by the natural, reasonable application of any fact or principle which may arise in connection with any subject, to the problem of healthful living. Such applications may be made sometimes in school assembly and frequently in schoolrooms to the class of children or to the individual pupil. Frequently opportunity will be found in relation to season of year, weather, interest in games and festivals. Correlation should be made with other subjects of the school curriculum, e. g., nature-study, primitive life, industry, etc., wherever such applications in health teaching may be made in a reasonable and effective way.

Every step takes on new meaning when the learner sees its place in the series of operations culminating in the commercial food supply of his own community, its sanitary regulation and domestic consumption. The elements of physiology and hygiene, and of physics and chemistry, are also called into requisition; they are all indispensable in fixing values of industrial products and determining economy in technical operation. What makes for hygienic living is as well worth knowing from the economic standpoint as what mechanical appliance will most increase the output. A proper study of the industries, therefore, I contend, will bring about a unified and closely correlated course in the biological and physical sciences by way of supplying the information wanted by the child in adjusting himself to the real world.⁵

In the elementary school as well as in the high school and college, correlation may be made between hygienic and ethical and social values. The fundamental ethical principles are closely related to the large, primitive, physical, and racial aspects of living.

IV. While attention of course should be given to the personal health of pupils in teaching hygiene, much emphasis should be

⁵ J. E. Russell, "School and Industrial Life," *Educational Review*, December, 1909.

placed, as already suggested, upon the health of school, home, and community, and the obligations of the pupil in relation to these social interests.

Children, like adults, can be interested in other people, in rules of conduct, in social conditions, in living and working relations more easily than in their own bodies. The normal healthy child thinks very little of himself apart from the other boys and girls, the games, the studies, the animals, the nature wonders, the hardships that come to him from outside. . . . Human interest attaches to what parks or excursions are doing for sickly children, how welfare work is improving factory employees, how small-pox is conquered by vaccination, how insurance companies refuse to take risks upon the lives of men or women addicted to the excessive use of alcohol or tobacco. Other people's interests—tenement conditions, factory rules—can be described in figures and actions that appeal to the imagination and impress upon the mind pictures that are repeatedly re-awakened by experience and observation on the playground, at home, on the way to school or to work. "Once upon a time" will always arrest attention more quickly than "The human frame consists—." What others think of me helps me to obey the law—statutory, moral, or hygienic—more than what I know of the law itself.⁶

Because the problems of health have to do principally with environment—home, street, school, business—it is worth while trying to relate hygiene instruction to industry and government, to preach health from the standpoint of industrial and national efficiency rather than of individual well-being.⁷

Sanitation then, in its various aspects, should form a prominent part of the health instruction of the pupil at all ages. Bacteriology has a legitimate place in the high school and in simpler presentation even in the elementary schools.

Such courses should be given in the public schools in such grades as to reach the children between eight and sixteen years old; these courses should consist in their simplest form of demonstrations, through use of agar or gelatin plates, of the existence and distribution of bacteria in air, water, milk, dust, feces, etc., and especially on hands; extending somewhat in scope and in individual experimental work as the grades are ascended. Microscopes would not be essential and the necessary apparatus and media could be furnished at a very low cost. . . . In the high schools, gradual advance in the detail of experiments should be arranged with the quantitative experiments, possibly some species work, and the microscope should be introduced.⁸

⁶ Allen, *Civics and Health*, pp. 7-8.

⁷ *Ibid.*, p. 10.

⁸ H. W. Hill, "Bacteriology as a Non-Technical Course for Public Schools," *Science*, November 5, 1909, p. 627.

V. The textbooks for health instruction in the future will differ widely from the great majority in present use. These must present for teacher and pupil the impersonal material of sanitation, bacteriology, civics, applied sociology.

VI. The pupil should get health instruction from many sources, from parents, family doctor, older brothers and sisters. So far as the school is concerned, the teacher who knows the pupil best and is brought into closest contact with him will have the best chance to teach health as well as ethics. In the elementary school the grade teacher will have this opportunity and responsibility. In the high school this task will fall to the special teacher who has the greatest interest in health teaching, the best preparation for such instruction, and the most favorable opportunity to influence personality and habits of the student. With the present trend in education the teacher of physical education will be most favorably situated to deal with the personal, social and ethical aspects of health. The bacteriology must be taught by the teacher who has had special training in this phase of biology with the laboratory methods.

VII. Finally, the accomplishment of this broad, well-rounded health instruction in the schools must necessitate a clear appreciation by boards of education, superintendents, and principals of what should and may be accomplished. The teacher must have broad and thorough preparation for this instruction. Such professional training must be given in the institutions where teachers are prepared for their work. If teachers are already overburdened and have too many subjects now, to learn and to teach, then other things must give way and make place for this health side of education if it is as important as it appears to be at present.

Passing reference only is made here to the teaching of sex hygiene in view of the encyclopedic report on this subject, presented by Professor Henderson in the *Eighth Yearbook* of this society.

Instruction with reference to sex is, in many respects, the most vital and important phase of health education. The possible direct and indirect benefits of needed work in this line upon the well-being of the individual, the home, and society at large cannot be over-estimated.

Adequate instruction in sex hygiene cannot be given until:

(a) Enlightened public opinion recognizes sufficiently the necessity for such instruction, and exhibits confidence in the ability of responsible advisors of children and youth to give the instruction needed; (b) Teachers are intelligent, wise, and tactful enough to give such instruction and guidance successfully. Comparatively few teachers today are capable of meeting the obligations which are involved in relation to the teaching of sex hygiene.

PHYSICAL EDUCATION

The term physical education is employed in some institutions and by some thinkers and writers to include all the different factors in education which have to do with the health of the pupil or student. Physical education is used here more narrowly and technically as referring to the supervision of large fundamental motor activities, expressed in play, games, dancing, swimming, gymnastics, and athletics.

The history of physical education presents in interesting progression the different ideas obtaining through the period of recorded history regarding the relationship of physical education to the life and education of the human being. The Greek idea as developed by the Athenians represented a balanced conception and practical realization of the relation between the physical and other aspects of education which have not been equaled since that period. The aim of the Athenians was to develop a beautiful mind in a beautiful body.

Everything that is good [says Plato in the *Timaeus*] is fair and the fair is not without measure, and the animal who is fair may be supposed to have measure. Now we perceive lesser symmetries and comprehend them, but about the highest and greatest we have no understanding; for there is no symmetry greater than that of the soul and body. This, however, we do not perceive, nor do we allow ourselves to reflect that when a weaker or lesser frame is the vehicle of a great and mighty soul, or, conversely, when a little soul is incased in a large body, then the whole animal is not fair, for it is defective in the most important of all symmetries; but the fair mind in the fair body will be the fairest and loveliest of sights to him who has the seeing eye.

Well might Charles Kingsley say of the Greeks, "To produce health, that is, harmony and sympathy and grace, in every faculty of mind and body, was their notion of education." The sculpture and literature which have come down to us from the best period of Greek civilization show how remarkably they achieved their ideals of beauty.

The climax of the physical education of the Greeks occurred in the Olympic games. It is a sad commentary on the sanity of the present time that in the attempt to revive the Olympic games, the

contest which has won most popular favor is the Marathon race. This may have been useful in a Homeric age, but it is entirely out of place in our modern world. Many boys of high-school age at least have without doubt been injured during the last few years in training for, or participating in, "Marathon races."

The dualistic philosophy of the early Christian era extending down to the Middle Ages gave no opportunity for physical education or adequate care of health. So long as the body was considered evil, the enemy of the spirit, sanity was lacking and rational education was neglected.

With the revival of learning, consideration was given to physical education with other aspects of human culture. There were early efforts to express both in theory and practice, the idea of physical education as derived from the study of the classics and the more recent influence of the age of chivalry.

Vittorino da Feltra (1378-1446), considered the first Italian schoolmaster of the new era, introduced in his school at Mantua, dancing, riding, fencing, swimming, wrestling, running, jumping, and archery. He seems to have been much ahead of his time, as outside of the training of young noblemen in various parts of Europe, no similar school is recorded until Basedow opened the Philanthropinum at Dessau in 1774. In the meantime several educational reformers wrote in liberal-minded fashion about physical education.

Martin Luther recommended the knightly exercises of fencing and wrestling. Joachim Comerarius (1500-1574) published a brief dialogue of bodily exercise, believing that boys should be encouraged to run, jump, wrestle, fence, etc. Comenius (1592-1671) believed in education through the senses and was first to enumerate the principles which lie at the foundation of kindergarten philosophy. He thought that a half-hour of recreation should follow each hour of study. Montaigne (1533-1592) is often quoted: Health and strength are necessary—

for the soul will be oppressed if not assisted by the body.

Our very exercise and recreation, running, marching, etc., will be a good part of our study. I should have the outward mien and behavior, and the disposition of his limbs formed at the same time with his mind.

It is not a soul; it is not a body we are training up; it is a man; and we

ought not to divide him into two parts and, as Plato says, we are not to fashion one without the other, but make them draw together like two horses harnessed to a coach.

John Locke (1632-1704) says:

Keep the body in strength and vigor so that it may be able to obey and execute the orders of the mind.

A sound mind in a sound body is a short but full description of a happy state in this world. He that hath these hath little more to wish for and he that wants either of them would be but little the better for anything else.

Emile Rousseau (1712-78) says:

The body must needs be vigorous in order to obey the soul; a good servant ought to be robust. The weaker the body, the more it commands, the stronger it is, the better it obeys. In order to learn to think we must exercise our bodies which are the instruments of our intelligence.

Pestalozzi (1746-1827) attempted to devise a system of school gymnastics based upon the nature of the body, and tried to combine industrial as well as general bodily training with mental and moral education in his experiments for the amelioration of the common people.

The essence of elementary gymnastics [says Pestalozzi] consists in nothing else than a series of exercises of the joints, in which is learned, step by step, all that the child can learn with respect to the structure and movements of the body and its articulations.

In this form of explanation Pestalozzi was one of the first to formalize in theory the process of bodily development, to make it a mechanical method of subjective and artificial control, and to favor an anatomical (as distinguished from a functional) idea of physical education which is subject to serious question at the present time.

Guts Muths (1759-1839) who taught at the Schnepfenthal for over fifty years, defined gymnastics as a system of exercises having bodily perfection for their aim. Here again is a tendency expressed, to develop the body for its own sake and somewhat independently of its true relation to mind and soul.

F. J. Jahn (1778-1852) is known as the "father of German gymnastics." Jahn was an extreme patriot and his desire was to rebuild the bodies of the young Germans in order that they might withstand the French. Jahn used games to some extent, but later

devised a great variety of forms of apparatus whose use seemed designed to develop strength of body in the shortest possible time. Jahn performed a great service to military Germany, but in his work scant respect was paid to physiology and anatomy and to some of the psychologic needs in the education of the young.

Adolph Spiess, a little later in the early part of the nineteenth century, became the pioneer in the development of school gymnastics. He also as a musician adapted musical accompaniments to gymnastic movements. His material was systematically arranged, but it neglected some essential requirements of physical education.

P. H. Ling (1776-1839) led in the development of the Swedish gymnastics which resulted in the most precise system of movements and exercises which the world has known. This system was elaborated to meet the needs of human nature in what Ling and his followers considered to be "its fallen and dilapidated state." In their interpretation of physiological principles, which seems today lacking in many vital elements, gymnastic movements were elaborated to meet needs which were expressed as "military, pedagogical, medical, and aesthetic."

In several countries in Europe outside of Sweden, and in parts of the United States, Swedish gymnastics have gained as prominent a place in the schools as has the so-called German system or any other method. All the divisions of gymnastics according to Ling tend to bring about unity.

Pedagogical gymnastics develop the *minute endowment* to unity among the parts of the organism. . . . In military gymnastics the unity is sought between the body and the weapon in relation to the expression of antagonist. . . . By means of medical gymnastics, one seeks to restore unity between parts which has been lost through their abnormal conditions. . . . Through aesthetic gymnastics, the subject expresses the unity which exists between the mental and bodily being. . . . Therefore, all the principal divisions have a mutual interdependence, and gymnastics, in which no regard is paid for the unity which should exist in and among these parts, have no laws but are simply based on whim or fashion.

The Swedish system required a degree of exactness in movement beyond anything demanded by other methods, and the principles of activity as outlined by the Swedes are considered by many to be structural rather than functional in spirit, lacking in many of the

important qualities demanded by our present-day physiology and psychology.

The outdoor sports of England and her colonies represent more than any other national movement in physical education, the expression of the play instinct, and present in striking variety and range of recreative elements a great programme of games and sports which has been an essential factor in the development of a great world power, for a long time the foremost among the nations. The English sports have had a prominent place in the life and physical education of our own country.

In the progress of physical education in the United States, two distinctive influences have arisen in this country. Dio Lewis (1861) introduced rather widely to popular use free gymnastics performed with music, and exercises with dumb-bells, wands, and other forms of hand apparatus. Sargent, more recently, as a phase of his support of physical education, has elaborated the system of developing appliances by means of pulley-weights, in which, by means of graded weights, measured resistance is given to definitely localized muscular movements. The attention which just now is being given to play, games, and swimming, as well as the revival of folk and national dancing, represents additional features and indicates the wide range and confusing variety of the manifold elements related to physical education.

All of the various materials and influences enumerated, from Greek onward, have entered into the relatively brief development of physical education in this country, and are all at the present time in use, though fortunately not in any single institution, nor in collective effect upon a single pupil or group. According to the prominence of national, political, or personal influence in school or community, certain ideas obtain control for the time in this as in other aspects of education.

There is at present, therefore, throughout this cosmopolitan country great diversity of opinion with reference to controlling ideas in physical education and complete lack of agreement regarding material and methods of instruction. This is inevitable and probably salutary, as opportunity is thus given for free experimentation and for local adoption of ways and means for recognized aims.

It is apparent to many, however, that physical education, more

particularly in the public-school system of this country, has on the whole lacked the support of a well-organized body of thought which is in harmony with the best current educational theory. To many, again, it is evident further that the principles of physical education, even as formulated, have not kept pace with general educational progress.

Several reasons may help to explain this condition of affairs. Not until the last few years has there been a practical recognition of the broader social scope of education with the implied obligations to the physical and social, as well as the intellectual and moral needs of the pupil. Beyond this, it is but recently that modern psychology and physiology have proclaimed the scientific facts which have shown the more vital and intimate interdependence between the different aspects of life, which are called physical, intellectual, and moral.

Up to the present time general educators have given little attention to the study of physical education. Such study, when undertaken, has stopped with the external details of school management; has been superficial as a rule; and has failed to penetrate to the intrinsic and vital phases of the problem.

On the other hand, the great majority of the physical educators have been ignorant of the general principles and tendencies of education. They have been trained narrowly, to think of and deal with physical education much as a detached problem, and too largely on the materialistic physical plane. This tendency to an unrelated specialization is not confined to physical education, but is perhaps aggravated here, inasmuch as a considerable part of the impetus in the development of this field has come through agencies outside of those directly educational. It has been unfortunate, also, in some respects at least, that so many of the teachers of physical education throughout the country have received their professional training in special normal schools, away from students in other departments of teaching, and outside the atmosphere of general education.

It is the business of physical educators, in co-operation with the agencies which should provide for hygienic care, to secure for the pupil, through a rational distribution of motor activities, certain health values represented by favorable posture, organic vigor, and other desirable biologic qualities. If necessary, these health quali-

ties must constitute the main goal in this field, but it is most desirable that physical education should occupy itself with a programme of activities for the young which would secure these physical aspects of health without fail, as by-products, as it were, while the pupil is being guided in the doing of things which will result in the acquirement of mental, moral, and social benefits. Health, then, in the narrower sense, becomes an essential means or condition in physical education to the accomplishment of certain exceedingly valuable results in the general education of the child.

It is unfortunate that the physical and muscular aspects of health occupy so large a part of the horizon of the physical educator.

The new asceticism must assert the value and duty of exercise, but it has only contempt for the ludicrous cult of muscle which is one of the follies of the age.

We must remember, what is so constantly forgotten, that vitality and muscularity are not one and the same thing.¹

Physical education is much more a matter of the nervous system than of the muscles. It should be considered more a qualitative than a quantitative affair.

Physical education is for the sake of mental and moral culture and not an end in itself. It is to make the intellect, feelings, and will more vigorous, sane, supple and resourceful. It should make for control and keep the body under and make it a servant and not a master. Practical ethics of body and soul is the core of all. The psychologizing of athleticism is now its crying need. The ordinary medical side is not enough. The history and psycho-physiology of military drill, dancing, the great national sports and games and their effects are needed.²

Physical education today, then, is too much occupied in:

a) Seeking certain postural and corrective results which are not after all satisfactorily obtained in class exercise by formal movements involving the consciousness of muscle and body by the pupil. These results, except as obtained in individual cases by remedial gymnastics, may be gained, in the main, as well or better through exercises which are more natural, spontaneous and enjoyable;

¹ Saleeby, *Health, Strength, and Happiness*, pp. 17, 101.

² G. S. Hall, *Proceedings of the National Education Association* (1908), p. 1015.

b) Training the body too much within itself, and without sufficient regard for the attitude of the mind and for the indirect effects of exercise upon disposition and personality ;

c) Developing various forms of ability which are not, in identity, similarity, or analogy, closely enough related to the interests and activities of human life to justify the time and effort given to them.

Physical education has not yet an integral place in the educational theory and programme of the country. It has been given certain space and time, and often grudging recognition in response to the hygienic demands (usually the protests of the physicians) in the effort to counteract, or to compensate for, the unhealthful influences of school life.

Physical education has had, however, not nominally perhaps, and not always adequately, but in effect, a very logical place in the kindergarten. Its position in the curriculum of the school above the kindergarten has been more uncertain. The petition of the physical educator is very commonly for more time in the curriculum. There is suspicion in the minds of some that the proffered material of physical education has frequently not been of a character to rationally compel the recognition asked. When physical education presents a programme which is psychologically and physiologically sound, and therefore, pedagogically acceptable, it will find itself in organic relationship with education as a whole and to the other subjects or departments represented.

Physical education should provide, in instruction and supervision, for the desirable margin of motor activity which is not otherwise supplied in the school curriculum or in the life of the pupil outside of the school.

The main function of education, perhaps, is to train the human mechanism toward efficiency as an instrument of self-expression, with reference to the various opportunities and responsibilities of life, at the time and later. The child learns far more of permanent value through what he does—and this always means neuro-muscular action of some sort—than through what he sees or hears or perceives in any way directly with the five senses. In fact, perception of sensation depends on some degree of activity. Motor sensation is the great cornerstone in the foundation of human education. The experience of a Helen Keller demonstrates how much can be

accomplished in education without sight and hearing if the main avenues of sensation from movement are left open.

The psychologists maintain that action even is necessary to the complete consciousness of sensation.

The unity in the reference of the sensation comes in on the side of the act. . . . It is not likely there can be any well-defined consciousness of the respective sensations, as such, except as they become co-ordinated in single activities and are made to serve definite functions in the carrying out of the activity. . . .

Consciousness grows in definiteness of reference and content as activity becomes more and more complex. Every emotion presupposes a definite organization and co-ordination of previous activities. The so-called attitudes of powers of mind, are simply differentiations of consciousness with reference to the need of action. The mental attitudes of all mature minds are strictly co-ordinate with the complexity of activity of which they are capable.*

The psychology of movements performed on the gymnasium floor or in the playground involves the same principles and elements as those belonging to classroom, laboratory, and studio, and in a particular case the former may involve a richer content and more important result than the latter. If the motor training and experience of the child are complete or satisfactory, even from the broader psychological standpoint, then, so far as muscular activity and exercise can secure these results, the child, as a rule, will have favorable posture and physique; organic health and vigor; facility and efficiency in action; aptitude and power for the tasks which may reasonably be demanded during a life career.

The determination of the scope and content of this entire range of motor activities, must always be a provisional one in relation to the typical or individual child, subject to revision as circumstances may dictate. The determination of the margin of motor action which belongs to physical education will depend upon the answer given to the general problem, and upon the breadth and variety of motor training demanded by the "humanistic, scientific and industrial" aspects of the newer education. This margin will vary with the varying course of study in different schools and sections of the country. The more completely the rational and liberal school curriculum may provide even incidentally for the physical education

* King, *Psychology of Child Development*.

needs of the pupil the better it will be for the child. Recent progress in education shows a marked increase in the larger motor elements adopted in the regular work of the school in connection with manual training, nature-study, school excursions, school festivals, and the like.

The physical education margin, in providing supplementary training, will naturally deal with the large, more primitive, and more fundamental forms of action. It should always strive to secure and maintain the basic "fundamental" power upon which the more "accessory" elements involved in the curriculum may safely rest. At times it should concern itself with the supports and buttresses of this superstructure in the attempt to preserve stability and equilibrium. This idea is better expressed in terms of function as it is related to the balancing of the programme of the pupil by providing for recreation, change of activity—keeping the center of gravity in the right place while all the time some of the most vital and larger values in education are industriously pursued by the teacher.

The subject-matter of physical education is found in play, games, dancing, swimming, outdoor sports, athletics, and gymnastics (reconstructed to satisfy educational needs). These headings are not mutually exclusive but are used to cover the range of activities.

The content of the physical education margin may seem less serious and dignified to some than the study of the humanities, science, or industry, but it may at any particular time, and in the long run, be as important as any or all of them, and much more so, oftentimes, for the individual. Further be it stated, that the more technical and specialized forms of ability in education depend very vitally for present and future well-being upon all that is logical and justified in physical education.

This proposed programme looks to the process of human evolution for general guidance concerning a part of the method to be pursued. Primitive men, our ancestors more or less remote, became strong and healthy; developed physical and moral powers through play in childhood and by doing very real things in hunting and fishing, in agriculture, in war, in industry, in commerce, in supplying human needs; but always in immediate unconsciousness of self, without understanding what went on in muscle and nerve. They were expressing ideas clamoring for utterance, or engaged in

accomplishing tasks with concrete and absorbing goals in actual or in mental view. Children and young people must do things today, not necessarily identified in type and purpose with those of primitive life, but in the same general spirit and manner if the method is to be effective and the results satisfactory.

Certain conditions seem necessary for rational exercise in physical education if the best results are to be obtained.

I. The activities of physical education should be carried on out of doors, whenever this may be made possible. The gymnasium should be considered an emergency-space, valuable to be sure, when required by inclement weather and under other circumstances; but it should never interfere with possible use of nature's infinitely better playroom out of doors.

II. The exercises should be natural in type, satisfying by their execution the play instinct and the fundamental powers and faculties as they develop, with due regard to the ancestral habits of activity and to the future practical needs of the individual.

Not every possible action of voluntary muscles and nerves is desirable in education by any means, even though this action may strengthen muscle and nerve structure, develop exact control and enhanced power of co-ordination, and bring results which seem to fulfil the conditions of improvement. We are learning by practical experience, and through the teachings of the newer psychology which aims to interpret this experience, that true culture of the highest type depends upon gaining faculty and power through the doing of things which correspond in type and quality, in the main motives and reactions, to the worthy deeds of the race and more particularly to the actual work and conduct of humanity today.

Education, whether in physical training or other branches, should secure to the pupil, beyond mere bread-and-butter needs, the ability to meet the wider opportunities and the possible emergencies in life; but the performance of tasks requiring primarily subjective control of action, and aimed too directly (and by a short cut) at benefit to bodily health or mental faculty, may not only fail to accomplish its direct purpose, but also fall short of the intended indirect benefit to other faculties and powers. There are many "fancy stunts," as well as exact and intricate performances in various branches of education which lack rational sanction from modern educational

theory. In the past they have been considered extremely valuable, not only because they were showy, but for drill and discipline. They are dropping very rapidly out of use in relation to reading, spelling, writing, manual training, and most of the departments of teaching.

Formal gymnastics, free-hand movements, for the most part, and much of the apparatus work of the gymnasium, belong to the category of artificial "stunts," mechanical movements; lacking the purpose, mental content, and objective which are essential to sensible educational performances. Most of the free-hand exercises, particularly, are mechanically rigid, jerky, and awkward, as compared with natural, useful movements of the body. They are uninteresting and distasteful to most boys and girls except in the early elementary grades, when they are considered by the physical educator even relatively less important.

Formal gymnastics in physical education correspond to drugs in medical practice. The movement in medical treatment even is away from the use of drugs. In a similar way progress in physical education must be away from all formal, artificial kinds of movement.

It is important that a reasonable amount of physical education should be required of every pupil and student in school and college. It is correlatively important that this training should enlist the interest and enthusiasm of each pupil, not primarily in keeping healthy, but in the doing of things, having intrinsic objective interest, whose performance will insure good health. Much of the required physical education at present cultivates a dislike for healthful exercise. This is inexpressibly unfortunate, and forms an indictment against such instruction in as much as one of the most important purposes of physical education should be to cultivate the liking for rational, pleasurable, healthful exercise.

III. In physical education, as in other branches, the pupils in practice should either: (*a*) express an idea, feeling, or emotion, which seems worth expressing, e. g., in dancing, pantomime, or other form of dramatic representation, or (*b*) there should be some definite objective aim or effect to be attained as the result of the muscular effort performed, as in maintenance of squad formation in marching, hitting a ball, throwing a ball into a basket, swimming to a given point, out-running a competitor, or any one of the indefinite number of things to do in games.

Given a rational observance of sanitary and hygienic practice in the schoolroom and a fair amount of time for play and recreation in fundamental motor training, and all the desirable qualities of health in structure and function of the body will accrue to the child without the artificial movements already referred to, except in individual cases (which will be fewer as education becomes more hygienic) where the most exact and accurately applied movements should be used like medicine to correct individual weaknesses and tendencies.

IV. The activities in physical education should be correlated whenever feasible with the subjects and activities with which the child is occupied elsewhere in the school or outside. Games vary with the season of the year, with climate and weather changes. There are many opportunities in connection with study of literature, history, nature-study, art, industry, and other subjects, to employ dances and games which have definite relation to the subjects in hand and give the child a most valuable opportunity to express himself more completely in relation to the interest which occupies his attention. It seems important for many reasons that the more accessory, specialized, symbolic modes of expression in education should be reinforced and broadened by the larger and vital forms of action which physical education may, and should, provide.

Folk dances may be correlated with seasonal interests and festivals, e. g., harvest time, Christmas celebration, patriotic anniversaries, May Day, etc. The development of the festival idea in relation to school work seems to have many valuable possibilities if the festivals can be utilized in a way to improve the desired general resultant of school work and not interfere with the attainment of recognized ends. The school festival as a rule, wins the enthusiasm of pupils. It affords opportunity for genuine correlation of literature, history, music, fine and industrial arts, and physical education; if physical education is ready to provide live material in dancing, marching, pantomime, and games.

To utilize the opportunities for correlation it is necessary that the teacher or supervisor of physical education be acquainted with the curriculum and the work of the school as a whole.

V. Gymnastic technique (as distinguished from marching, dancing, games, athletics), when used under the head of formal gym-

nastics or other titles, should consist in the practice of movements involved in actual and natural kinds of performance, or closely related in form to such movements, for the purpose of acquiring greater strength and skill, so that the complete action or original performance may be more effectively executed. Such technical practice is ordinarily better performed through individual exercise, as a musician practices on the instrument, or a singer practices with the voice. It is possible, however, to practice advantageously some of the large movements involved in dancing and games in class instruction. Children in the elementary grades even may devise movements and construct gymnastic drills which will satisfy the psychologic demands of such drills, and incidentally give desirable physiological results; e. g., a third-grade class constructed a gymnastic drill which was designed to improve ability in rope-climbing. This drill naturally lacked the mechanical precision of Swedish gymnastics but it possessed enough value of another kind to more than make up for what was lost.

VI. The pupil, while intent upon some external result in individual or co-operative effort, should be unconscious of his own body or of the purpose of exercise to benefit his body or health.

Self-consciousness, self-analysis of the mind or body in education, except as incidentally required in the direct effort to attain an external end in a more effective way, must always detract from the best results, whether measured in terms of bodily health, or skill in action; the actual products of effort expended, or the indirect effects of education.

VII. Mechanical uniformity and precision of movement, in a group or class of children, can logically be demanded, not primarily or simply because the teacher asks for, or orders it, or because it appears better to the spectator, but only when the situation, expressed as an external problem, requires it. Evolutions in marching, and sometimes dancing, necessitate precise uniformity in movement among smaller or larger numbers of actors, and these evolutions must be changed by word of command of teacher, officer, or leader. In general, however, it is most desirable that mechanical uniformity should not be demanded, but that, with the observance of certain general principles of action, the pupil should be left free to express individuality in action. Uniformity and precision in gymnastics,

persisting from the old military régime in physical education, particularly, have come to be fetishes, and in the effort to secure them, important values have often been neglected.

It is significant and illogical that the gymnasium is practically the only place in school where uniformity in action is expected of all pupils in a grade. In the future, gymnastic technique must be reconstructed in relation to real conduct in life, to meet psychic and functional needs rather than the mechanical anatomic standard of precision which prevails so largely at present.

VIII. Physical education should be supervised and directed with reference to the beneficial social and moral results which may be gained by the right performance, in play, games, and athletics, of the large fundamental types of human action.

It is because the brain is developed, while the muscles are allowed to grow flabby and atrophied, that the deplored chasm between knowing and doing is so often fatal to the practical effectiveness of mental and moral culture. The trouble is that few realize what physical vigor is in man or woman, or how dangerously near weakness often is to wickedness, how impossible healthful energy of will is without strong muscles which are its organ, or how endurance and self-control, no less than great achievement, depend on muscle habits.⁴

Spinoza makes the pregnant remark that we do not know what Body is capable of. We may go a step farther and, following Aristotle, declare that we shall never know, till Body finds its true function as instrument of fully developed soul. For materialism consists, not in frankest recognition of matter, but in the assignment to it of a spurious supremacy or independence. There can be no materialism in utmost emphasis upon physical education, so long as "Body for the sake of Soul" is as it was with Plato, the presiding principle of educational action.⁵

Very little profitable instruction in theoretical ethics can be given in the elementary or even in the high school. Children and youth get most of their moral instruction in relation to action, and many important ethical principles may be instilled in connection with the large primitive types of conduct involved in personal health problems and in games and sports. The playground, gymnasium, and athletic field afford the best opportunities for the learning of moral lessons,

⁴G. Stanley Hall, "Moral Education and Will-Training," *Pedagogical Seminary*, Vol. II, 1892.

⁵MacCunn, *The Making of Character*, p. 59.

sometimes even by college students. The president of a great university said a few years ago, "The instructor of physical education has a more powerful influence upon the morale of students than the teacher of any other subject." It is most important then (1) that this teacher should have an adequate appreciation of the moral influence that should be exerted, and (2) have personality, character, and tact to exert such influence wisely and effectively.

IX. In the fifth or sixth elementary (or the first or second grammar) grades when some of the girls enter the pre-adolescent period of greatly accelerated bodily growth, boys and girls should have the more vigorous games and exercises in separate classes, and from that time onward in their physical education the forms of exercise should be adapted to sex differences as well as to advancing age and personal needs.

X. While in physical education certain psychic, social, and ethical results should be directly sought, the forms of exercise should always be arranged and controlled so that favorable physiologic values may be obtained. In other words, physical education should always be hygienic in the highest degree. More than this, physical education must not only be hygienic for the typical pupil of any particular age, but it must be safe and hygienic for each individual pupil. This can only be accomplished on the basis of knowledge of the health condition of each pupil. Many students, both boys and girls, in our schools have been injured, and are being injured, by participation in games and exercises which are too severe for them, with their individual health weaknesses and limitations. The health inspection, advocated earlier in this report, provides an intelligent basis for the individual adjustment of exercise.

Some of the faults of the present methods of physical education are indicated by implication under the previous headings.

Brief reference is now made to certain common and very practical errors in present physical education teaching which have a direct bearing on health—

a) It is an error to teach pupils to "toe-out" in the gymnasium or on the drill ground, in standing, marching, running, and dancing. Turning out the toes tends to weaken the foot—to produce "flat foot." The "straight-foot" position with the feet parallel (not

necessarily together), or with toes only slightly turned out, is the best position.

b) There is too much stamping in gymnastic practice. The ball and heel of the foot should never strike the floor at the same instant. If this occurs the foot ligaments are often strained and this may weaken the arch of the foot. In dancing, running, jumping, and in stepping or changing position in any way, the ball of the foot should always strike the floor first. Jarring of the body should be reduced to a minimum. There is too much emphasis in gymnastics upon downward movements with arms, legs, and body, and not enough effort to lift up and hold up the entire body against the force of gravity.

c) No gymnastic movements taken when the pupil is standing should require backward bending of the spine except as this occurs unconsciously and to a slight degree when the very laudable effort is made to lift or hold the chest up and forward.

d) There is a frequent tendency to teach girls and young women gymnastics, with and without apparatus, which are too strenuous and heavy for them. Girls should be trained in the gymnasium how to land lightly on the toes; how to come down a rope from a moderate height; how to get off a street car properly; how to swim if there is opportunity for such instruction; but jumping, and swinging by the arms, should be controlled and limited carefully for adolescent girls and young women. The subject-matter of physical education needs revision in relation to the requirements of girls and women.

e) Too often the teacher of physical education, intent upon the conduct of class or group as a whole, is not sufficiently aware of the individual, and as a result one or more pupils may exercise beyond the point of reasonable fatigue, or in some way prejudicial to personal well-being.

SOME FORMS OF EXERCISE IN PHYSICAL EDUCATION

The fundamental impulse or motive to be considered in physical education is play. Those students who study play most carefully give it most serious consideration with reference to its possibilities in the life and education of the child. The more strenuous and intellectual modern life becomes, the more important it appears to be

to cultivate the spirit and to provide the chance to play for child and adult. The theories of play are not altogether in agreement, but whether one believes in the Spencer-Schiller theory that play is due to the effort of surplus energy to express itself, or in imitation or recapitulation theories, or in the Groos theory of instinct, all may agree that the young of animals exhibit the play instinct and that the human child has his full share of it.

The distinction between play and work for the child is not very definite for some wise people believe that the more like play the child makes his serious tasks, the more benefit he will derive from them. So in physical education it is most desirable that the child should have opportunity and guidance for the doing of those large activities which will keep him vigorous and robust, which will develop alertness, self-control, with the other desirable qualities, and all in the spirit of joyous, free, exultant movement.

It may be justly claimed that the child gains more educationally, in the first eight or ten years of his life and lays a surer foundation for the mental and physical health of after life through vigorous, unrestricted physical activity than through any other factor whatsoever. By this I mean spontaneous play under favorable conditions, with accompanying fresh air, sunshine and good food, supplemented and enriched by gymnastics and athletics, including swimming. I do not mean that nervously exhausting and deadening drill known as the Swedish gymnastics, which, in the name of educational gymnastics, adds fatigue to fatigue by taking the initiative away from the child and forcing him to pay constant and close attention to the orders of the teacher, that he may execute with precision entirely uninteresting and conventional movements.*

The plays and games of childhood present ever-varying conditions, constituting both mental and physical problems of the highest educational value. The child is habituated to make rapid judgments in the face of changing conditions. He must be constantly on the alert, must perceive conditions as they are, must immediately adapt his own action to their quick-changing relations, and, as a result, he gains the perfect control of his body which serves him throughout life. As teachers, we must recognize that the judgments upon which all these active movements are based are intellectual operations. In play the child is the unit of force; he initiates his own conditions. His limitations are self-imposed. His self-control lies in execution

* G. W. Fitz, "Hygiene of Instruction," *Proceedings of the National Education Association* (1898).

rather than in inhibition. He is concerned with self-expression rather than with self-repression. Play thus relates itself to the truest conception of education, the development of the power of the individual to act as a self-directed unit in the community.⁷

In the large social problem of providing for play, the playground becomes the primary and essential factor in making play reasonably possible. The gymnasium, schoolroom, nursery, or other inclosed space should be considered an adjunct to the playground. As the little child gets older the play impulse expresses itself more satisfactorily in games; simple at first, and later more highly organized. From the almost unlimited range of game material at present available, certain lists are here suggested as adaptable to the different grades in school, and to boys and girls when games and exercises should be adapted to their separate needs.

Two general classes of games are used very largely on the playground or in the gymnasium: (a) the "dramatic game" which is characterized by the expression in movement of the child's ideas, without reference to any objective end: e. g., pantomime, dancing, and singing games; (b) the game of skill in which the effort to accomplish some definite external result involves skilled action with varying degrees of physical strength and endurance: e. g., ball games and those requiring forms of marksmanship.

While many games require only the independent action of the individual player, there are a large number, on the other hand, which depend for success upon co-operative group action, upon "team work." Each type of games has its own peculiar advantages and is adapted to certain ages and classes of children.

The dramatic game is most acceptable and useful to children in the kindergarten and the first two elementary grades.

The games which prominently involve individual power and competition are best suited to children from eight to twelve years of age. The group and co-operative elements in games are valuable features for pupils in the later grammar grades and high school, and also, of course, for college students. During the period of adolescence the dramatic and individual elements are not eliminated but they lose their relative prominence as the social and co-operative qualities become more pronounced.

⁷ "Play as a Factor in Development," *American Physical Education Review*, December, 1897.

Many games may be played with enthusiasm in all of the first five or six elementary grades, but the game under the same name will develop in complexity and difficulty as the children grow older and gain interest in increasing ability and technical skill.

GAMES SUGGESTED FOR SCHOOL USE

Grade I

Running games—

Drop the Handkerchief.

Cat and Mouse

"Come Follow Me"

Cat and Mice

Garden Scamp

"I Saw"

The Boiler Burst

Follow the Leader

Claps

Dramatic games (constructed by class), as—

Train games

Fire-engine games

Fairy game

Squirrel game, etc.

Singing Games, as—

Swinging Song—A. L. Stevenson

Folk Games and Dances—C. Crawford

Swedish Song Plays—Bolin

Singing Games—Eleanor Willard

GRADE II

Drop the Handkerchief

Cat and Mouse

Cat and Mice

"Come Follow Me"

"Have You Seen My Sheep?"

Garden Scamp

"I Saw"

The Boiler Burst

Follow the Leader

Claps

Black Man

Single Relay Races—simple form—individual against individual—score by points.

Folk games, as "Shoemaker"

GRADE III

Drop the Handkerchief
Cat and Mouse
Herr Slap Jack
"Have You Seen My Sheep?"
French Blind Man's Buff
Blind Man's Buff with wand
Steps
Sheepfold
The Boiler Burst
Wolf and Shepherdess (or Fox and Geese)
Follow the Leader
Claps
Tommy Tiddler's Ground (Kingsland)
Stealing Sticks
Black Man
Single Relays

GRADE IV

Cat and Mouse
Herr Slap Jack
"Have You Seen My Sheep?"
French Blind Man's Buff
Blind Man's Buff with wand
Steps
Bull in the Ring
Sheepfold
The Boiler Burst
House Hiring
Wolf and Shepherdess (or Fox and Geese)
Follow the Leader
Claps
Tommy Tiddler's Ground (Kingsland)
Stealing Sticks
Tame Fox
Hill Drill (or Pom-pom, Pull away)
Bound Hands
Black Man
Circle Tag
Three Deep
Relays (use of obstacles)

GRADE V

Cat and Mouse
 Herr Slap Jack
 "Have You Seen My Sheep?"
 French Blind Man's Buff
 Blind Man's Buff with wand
 Steps
 Bull in the Ring
 Sheepfold
 The Boiler Burst
 House Hiring
 Wolf and Shepherdess (or Fox and Geese)
 Follow the Leader
 Claps
 Tommy Tiddler's Ground (Kingsland)
 Stealing Sticks
 Tame Fox
 Hill Drill (or Pom-pom, Pull away)
 Bound Hands
 Black Man
 Line Tag
 Circle Tag
 Three Deep
 Relays $\left\{ \begin{array}{l} \text{Single} \\ \text{Double} \end{array} \right\}$ with obstacles
 "All Up"
 Duck on the Rock

DEVELOPMENT OF THE BALL GAME (THROUGH FIRST FIVE GRADES)

I. *Rolling Ball Games*

- a) Children roll ball from one to another.
- b) Roll with aim. Teacher in center of circle rolls ball to each child who then returns it.
- c) French ball—one child in center of circle. Children attempt to roll ball from one to another across circle without having it caught by child in center, for if he catches it the player who touched it last must take the center place.

II. *Bouncing Ball Games*

- a) Individual child practices bouncing ball and catching it.
- b) Teacher in center bounces ball to each child who returns it in the same way.

- c) Individual child practices throwing ball up and catching it on bounce.
- d) One child in center of circle calls name of some other child and tosses ball in air. Child called must catch ball on one bounce.
- e) Tossing ball up and catching without bounce.
- f) (d) may be played without letting ball bounce.
- g) Battle ball.

III. *Throwing or Passing Ball*

- a) Teacher in center throws ball to each child who throws to her.
- b) Touch ball may be played passing ball (instead of rolling).
- c) Teacher (or Leader).
- d) Dodge ball (moving goal).
- e) Zigzag.
- f) Battle ball (throwing ball).
- g) Puss ball.
- h) Medicine ball.
- i) Stride ball.
- j) Toss ball (overhead), relay.
- k) Newcomb.
- l) German bat ball.

ATHLETICS AND GAMES (FIFTH, SIXTH, AND SEVENTH GRADES)

Games in which the *individual* is alone concerned

Boys	Girls
Swimming	Swimming
Skating—ice and roller	Skating—ice and roller
Jumping	Running
Running	Archery
Fungos—batting flies	Battledoor and shuttlecock
Archery	Diabolo
Battledoor and shuttlecock	Rowing
Diabolo	Canoeing
Rowing	Tether ball
Canoeing	
Tether ball	

Group Games and Contests in which the *individual* is most prominent

Boys	Girls
<i>Games of Tag</i>	<i>Games of Tag</i>
1. Cross tag	1. Cross tag
2. Pull away	2. Pull away
3. Hang	3. Hang
4. Prisoner's base, etc.	4. Prisoner's base, etc.

Boys
Relay Races
 Running
 Indian clubs
 Wrestling
Ball Games
 Screen ball
 Curtain ball
 Center ball
 Dodge ball
 Stride ball
 Zigzag ball, etc.
 Circle rope jumping
 Tennis
 Leapfrog
 Handball
 Giant stride
 Croquet
 Cross country *walks*
 Gardening, Nature-study
 Track and field events

Girls
Relay Races
 Running
 Indian clubs

Ball Games
 Center ball
 Curtain ball
 Dodge ball
 Stride ball
 Zigzag ball, etc.

 Circle rope jumping
 Tennis
 Leapfrog
 Handball
 Giant stride
 Croquet
 Cross country *walks*
 Gardening, Nature-study

Events in which *Team Work* gradually becomes the essential feature

Boys
 Baseball
 Basket-ball
 Field hockey
 Socker football
 Cricket

Girls
 Indoor baseball
 Basket-ball
 Field hockey
 Cricket

ATHLETICS AND GAMES

High School

(In addition to preceding)

Boys
 Baseball
 Basket-ball
 Field hockey
 Ice hockey
 Cricket
 LaCrosse
 Socker football
 Rugby football
 American football
 Handball
 Swimming and diving

Girls
 Indoor baseball
 Basket-ball (girls' rules)
 Field hockey
 Cricket
 Handball
 Swimming and diving
 50-yard dash
 Hurdles
 Canoeing and rowing
 Tennis
 Billiards

Boys
Boxing
Track and field athletics
Squash
Canoeing and rowing
Tennis
Billiards
Golf
Bowling

Girls
Golf
Bowling

Basket-ball under proper restrictions is an admirable winter indoor game for both boys and girls. The rules of the game should be modified for the girls, as is the case in some schools. Girls should be protected by the rules from too violent jolting and jostling of the body and from covering in play more than one-third of the regulation floor area. For boys the rules of the Amateur Athletic Union should be used as these provide better than the present inter-collegiate rules, for a limitation of undesirable features of play.

FOOTBALL

The value of football in the training of high-school boys, especially those of the large centers of population, is well recognized. No other game now played brings out so well the qualities of manliness, courage, daring; the willingness to sacrifice and subordinate self for the good of the whole; alertness; the ability to co-operate with others; quickness of judgment, and determination. Yet the sacrifice of twenty-nine lives and numerous serious accidents in one season all testify to the necessity of a radical reform, if the game is still to be played by the American boy.

It is comparatively easy to point out what ends or results are to be sought in the reorganization of the game, but exceedingly difficult to formulate the specific rules that will bring about the desired effects. Change must be made in the manner in which the game is supervised as well as in the actual playing rules.

Examples

1. The physical director of a prominent preparatory school stated, when between halves it was suggested that one of his "backs" was "all in," that he had given him two ounces of whiskey.

2. The coach of a prominent military academy is said to run what might be called a book-making establishment in which he urges his players to bet on the games.

3. One boy died of strychnine poisoning as a result of a hypodermic injection between halves (reported in newspaper).

Certain changes in football are evidently desirable while others have been suggested.

1. The rules provide for 35-minute halves which may be shortened by agreement between the two captains. Rarely is the full length of halves played, yet it would be better to put the maximum length at 15 or 20 minutes. After this length of time it becomes a matter of endurance and brute strength rather than skill.

2. Some regulation is necessary which will require the removal of a player who is manifestly in no condition to play. Not infrequently a player with slight concussion of the brain is allowed to continue in play. Possibly a rule necessitating the removal of a player, who asked or required time to be taken out for him, would meet this need. It is usually the player who has been repeatedly injured that at last receives the "fatal blow" (commonly reported in papers).

3. Modification of rules (now under discussion) so as to (a) protect the player better from injury; (b) do away with mass plays; (c) make game more open and provide for more free play.

It is most desirable that rules of play should be so devised that all the range of valuable qualities would be increased to the maximum while the elements of danger should be reduced to a minimum, if they cannot be eliminated.

TRACK AND FIELD ATHLETICS FOR HIGH SCHOOL BOYS

Track events of college athletics should be carefully controlled. Many high-school boys are injured for months, years, or for life by taking part in endurance races. There is no possible benefit from the long races to compensate for the harm that may result. High-school boys should not take part in races longer than 100 or 120 yards.

Hammer-throwing contest and tug of war should not be allowed. In shot-putting, the weight of shot should be limited to 8 or 12 pounds. Field athletics are suitable for boys, such as pole-vault, and long and high jumping on soft ground.

ATHLETICS FOR GIRLS

The typical outdoor athletic contests are not suitable for girls. Running races above 75 yards in length are distinctly objectionable.

Jumping should be very carefully controlled and should generally be restricted for adolescent girls. The developing reproductive organs, at this age, are easily subject to displacement. Many girls and young women have been seriously and permanently injured, in ways entirely avoidable, by participation in exercises too violent and taxing. Exercises for girls and women should be intelligently selected and adapted to their peculiar conditions and needs. With proper regulations, however, group games and contests are exceedingly valuable for girls.

Women, certainly as much as men, need to learn through practical experience the rules of fair play, generous treatment of rivals and opponents, merging of self in co-operative effort, concentration of power, and the bending of all energies toward an impersonal objective goal. A woman of direct experience and keen discernment has stated suggestive opinions regarding this phase of physical education in the following words:

There is no training which girls so much need as that which develops a sense of honor and loyalty to each other, and games will do more to really make these living qualities than the ethical systems taught in a college curriculum. It takes the finest kind of courage to be fair, to be honest, and to be loyal, and these are absolutely essential in good team work.

We may think that little vanities and jealousies and little unkind words or somewhat exaggerated statements have little harm in themselves; that bragging and snobbishness are perhaps pardonable under some conditions. Games try out these qualities and they appear in their exact proportion and in all their ugliness, devoid of the graces in which they are so often half hidden. A game is a well-nigh perfect democracy. Nothing is so good for the girl as to find that money, clothes, family, prestige, or "pull" are as nothing—that they do not help her to play good ball or make a team. She stands or falls absolutely by what she is and can do, and realizes that the game makes all equal, and that she may have to shake hands with a despised social rival on the field.

Some women are abnormally sensitive and introspective or morbid and live too much on the subjective side of life. The various ethical and religious cults which appeal primarily to the subjective self appeal largely to women. Sports are primarily objective, they afford no opportunity for analysis of feeling or consciousness of the process. The thought is upon the things to be done and not upon the doer. Every institution which provides opportunity for women's games is erecting a barrier against nervousness, morbidity and too much introspection.

The qualities which games develop are not essentially masculine, they are but human qualities needed for human fellowship, and I have yet to see a group of girls made masculine by holding these ideals before them, and where the spirit of the training is that which I have been trying to portray. I do not mean to say, of course, that every individual trait can be strengthened, every defect removed by game work, or that games alone can do this; but I do mean to say that organized sports for women, when put on a proper basis and under intelligent directors, will go a longer way toward training the faculties and moral instincts than many of the courses of instruction which are given the credit for doing this.^a

The management of group athletics for high-school girls is rendered difficult by the fact that the girl should not take part in a vigorous game during the menstrual period. At just this time, not infrequently, her participation is needed as a member of a team. To guard against such a difficulty it is important to have several substitutes properly trained, or if this provision cannot be made, the game, however important, should be delayed rather than to allow any girl to run the risk of harm. The above and other reasons support the proposition that interschool or interinstitution athletic contests for girls are not as a rule advisable. If allowed under exceptional conditions they should be supervised with great care. Interclass games within the school can be more safely administered.

Originality and ingenuity in adaptation of games for high-school and college girls will bring about great improvement in this field of physical education.

In one eastern college for women, by the construction of implements of suitable weight, enjoyable and beneficial contests have been devised: discus throwing (with 4-pound discus); stilt race—20 yards; torch race—20 yards; javelin throwing; hurdle race—30 yards.

SWIMMING

Swimming is a valuable form of exercise for boys and girls and an accomplishment attended with many beneficial results, not only in strength and grace of body, but also in self-control and confidence in one's ability to do things in unaccustomed surroundings. In connection with the ability to swim, it is most advantageous that

^a Kellor, *Ethical Value of Games for Women*.

every boy or girl, at least of high-school age, should be taught how to assist a disabled person in the water, and also to resuscitate a drowning person. Such training has very genuine mental and moral value and through it the emphasis upon the principle of mutual helpfulness exemplifies the idea of social interest which it is important that the young adolescent should get at an early stage. Swimming is a valuable feature in physical education. Recently a regulation has been put into effect in Boston requiring that all high-school girls as well as boys shall learn to swim.

DANCING

Dancing is considered by some authorities the best of all forms of exercise. A prominent nerve specialist has recently stated his belief that dancing is the most perfect of all exercises, particularly because of its beneficial effect upon the nervous system. It has come into prominence within the last few years through the revival of folk and national dancing in this country and Europe.

In the wealth of dance forms coming from many nations, and because the dance is related to so many different interests and kinds of expression, there are almost unlimited possibilities in the adaptation of dances to children of different ages. It is desirable that in the education of boys and girls dancing should not be solely a pleasurable form of movement, though this would often be worth while in itself, but when the dance is used as a form of expression of worthy ideas and feelings, through the correlation of art, music, history, and literature with the dance, its indirect value is widely extended without its hygienic and recreative benefits being in any way lost.

Through the selection and adaptation of types of dancing to the different stages of development and mental interest of children and youth, dancing may become a very prominent factor in the physical education of the young.

MARCHING

Marching of the traditional military type has been much used in the gymnasium. It is an excellent form of drill in precise movement, whose utility finds application in the orderly movement of pupils through school corridors and transit from room to room, and in the very practical and important fire drill. It has other useful

possibilities which have not yet been much developed. In evolutions and formations, more flexible and less rigid than the soldier type, much variety and interest may be added to these squad and class evolutions. The arrangement of geometric and art figures, of different designs, suggested in flag formations and the like, aided by the color effects of special costume, will indicate some of the modifications which may be suggested.

Physical education should utilize exercises which are natural, interesting, and enjoyable, and which, in unconscious fashion, accomplish the desired ends of this fundamental motor training.

CONCLUSIONS

I. That these different aspects of health care in education are vitally related to each other.

II. That the conditions affecting the child are so arranged that the responsibility for the health care of the pupil must be divided with varying distribution of duties between the following: parent, family physician, teacher, principal, school physician (sometimes school nurse), and teacher of physical education.

III. That there should be sympathetic and close co-operation between home and school forces for the conservation and improvement of the child's health.

IV. That all of the school officials, beginning with the teacher and principal or superintendent, must meet his or her full share of responsibility in relation to the health of pupils, if this work is to be well done.

V. That the desirable balance and unity of the five phases of school supervision and teaching which affect the pupils' health renders necessary beyond the service of teacher or principal a co-ordination of functions which should be centered in a supervisor of health or hygiene in the schools.

VI. That each state should have a supervisor of school hygiene; and each city of sufficient size, and each county in the rural districts, should have a local supervisor of school hygiene.

VII. That such a supervisor should have a broad and thorough general and technical training to perform his duties successfully.

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CONSTITUTION

(Revision proposed by the Executive Committee)

ART. I. *Name*.—The name of this Society shall be “National Society for the Study of Education.”

ART. II. *Object*.—Its purpose is to carry on the investigation and to promote the discussion of educational problems.

ART. III. *Membership*.—Sec. 1. There shall be three classes of members, active, associate, and honorary.

Sec. 2. Any person who is desirous of promoting the purposes of this Society is eligible to active membership.

Sec. 3. Active members shall be entitled to hold office, to vote, and to participate in discussion.

Sec. 4. Associate members shall receive the publications of the Society and may attend its meetings, but shall not be entitled to hold office, to vote, nor to take part in discussion.

Sec. 5. Honorary members shall be entitled to all the privileges of active members, with the exception of voting and holding office, and shall be exempt from the payment of dues.

A person may be elected to honorary membership by vote of the Society on nomination of the Executive Committee.

Sec. 6. The names of the active and honorary members shall be printed in the *Yearbook*.

Sec. 7. The annual dues for active members shall be \$3.00, and for associate members \$1.00.

ART. IV. *Officers and Committees*.—Sec. 1. The officers of this Society shall be a president, a vice-president, a secretary-treasurer, an executive committee, and a board of trustees.

Sec. 2. The Executive Committee shall consist of the president and four other members of the Society.

Sec. 3. The president and vice-president and secretary-treasurer shall serve for a term of one year. The other members of the Executive Committee shall serve for four years, one to be elected by the Society each year.

Sec. 4. The Executive Committee shall have general charge of the work of the Society, shall appoint the secretary-treasurer, and may, at its discretion, appoint an editor of the *Yearbook*.

Sec. 5. The Board of Trustees shall be elected by the Society for a term of three years, one to be elected each year.

The Board of Trustees shall be the custodian of the property of the Society, shall have power to make contracts, and shall audit all accounts of the Society and make an annual financial report.

Sec. 6. The method of electing officers shall be determined by the society.

ART. V. *Publications.*—The Society shall publish *The Yearbook of the National Society for the Study of Education*, and such supplements as the Executive Committee may provide for.

ART. VI. *Meetings.*—The Society shall hold its annual meeting at the time and place of the meeting of the Department of Superintendence of the National Education Association. Other meetings may be held when authorized by the Society or by the Executive Committee.

ART. VII. *Amendments.*—This Constitution may be amended at any annual meeting by a vote of two-thirds of voting members present.

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ELLWOOD P. CUSBERLEY,
THE NINTH YEARBOOK

OF THE
NATIONAL SOCIETY FOR THE STUDY
OF EDUCATION

PART II
THE NURSE IN EDUCATION

BY

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**SUPPLEMENT TO THE YEARBOOK ON "HEALTH AND EDUCATION" DISCUSSED AT
THE INDIANAPOLIS MEETING OF THE NATIONAL SOCIETY
FEBRUARY 28, 1910**

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PREFACE

The purpose in this second part of the *Ninth Yearbook* is to present a brief survey of the entrance into the work of public education of the professionally trained nurse; to bring together some of the important results already attained in this field; to indicate the scope and possibilities of the work of this educational nurse; to suggest the relationship of the nurse to the school and community, and to indicate the co-ordination of the nurse's work with that of parent, regular teacher, school physician, teacher of physical education, and other special teachers whose particular subjects bring them into relation with the health side of education. Valuable help and guidance have been given in the preparation of this report by Professor Henry Suzzallo.

INTRODUCTION

THOMAS D. WOOD

The most important of all the nation's resources is the health of the people.

The most valuable asset in this capital of national vitality is the health of the children.

The public school is the most effective agency of the nation for the conservation of child health and in the long run the school will become the most influential factor in the conservation of national health as a whole.

In the past the schools, even under most favorable circumstances, have been to some degree at least disadvantageous, and frequently directly dangerous to the health of children.

Some of the factors inseparable from present school conditions, notably the confinement of children in the schoolroom; and the segregation of pupils, with consequent communication and distribution of unrecognized infection, present health difficulties whose solution will tax all the resources which knowledge and money may render available.

The problems which have arisen out of the great health movement of the present day are many and varied. Many of the most important of these are related directly and indirectly to the work of public education. Some of these problems formulate themselves as follows:

a) What may the schools do to insure the best possible physical state of the pupil in order that he may be in the most favorable condition for the educational process?

b) How may all the school conditions in the environment, the implements and processes of education, be made salutary and healthful in their effects upon the pupil?

c) What materials and methods shall be utilized to inculcate in the child practical motives and habits of healthful living, and to provide instruction adequate for the present and future needs of the pupil in relation to conduct affecting the health of the individual, the home, the community, and the nation?

As in the history of public hygiene, so in the development of school

hygiene, the first step was to prevent and control the spread of communicable disease. To assist teacher and principal by providing professional skill for the problem; to co-ordinate the work of school hygiene and public health, provision has been made variously and in different places for the school physician or medical inspector.

This movement of medical inspection of schools has spread in desultory fashion through many of the larger and a few of the smaller cities throughout the country, without uniformity, but in a way to typify a method of organization suitable to a serious situation. However, between the essential limitations of the knowledge of teacher and principal on the one hand, and of the time of the school physician on the other, a striking and significant hiatus has arisen, so far as the vital needs of the child are concerned. To bridge this gap which the recent discoveries in medical science have made more striking and apparent within the last few years, the school nurse has come into being.

The introduction of the graduate nurse into public education has been rapid and dramatic. No innovation in the schools has ever met, probably, with such instant and spontaneous support and approbation. Little time will be required to convince most school authorities of the wisdom of expenditure involved in the cost of the school nurse. Not only has the nurse more than fulfilled expectations regarding the professional services which she was specifically appointed to render, but she has rapidly developed forms of hygienic service, social and educational, to pupil, home, school, and community, which have naturally grown out of the wonderful opportunities inherent in her work. Moreover, her achievements almost from the beginning have demonstrated the extraordinary value and significance, not only of the direct but the indirect and incidental features of this new field of service.

Prominent among the results already accomplished by capable nurses in this field are the following:

- a) Detecting early signs of communicable disease among school children, many of which would otherwise be overlooked altogether or until the disease, if severe, would have become more pronounced with much more extensive infection of fellow-pupils.

This early detection of disease symptoms results variously in:

1. Marked reduction in the number of cases of infectious disease due to segregation, with consequent actual saving of child life and reduction of school child mortality.

2. Early treatment of disease, with frequent lessening of danger and severity of the disease.
- b) Treatment in school of minor accidents and ailments and of mild cases of local infection under medical direction, with consequent reduction to a minimum of educational loss due to exclusion from school for various forms of injury and disease.
- c) Instruction of mother in the care of the child, in the health of the household, and in manifold aspects of the life of the family, with consequent benefit to the community.
- d) Supervision of sanitary conditions of the school.
- e) Health guidance and instruction given to individuals and groups, according to local conditions, and the opportunities afforded.

While certain aspects of the work of the nurse in the school will be made uniform by formal regulation and accumulating tradition, still many of the most valuable features here must depend upon local need and circumstances; upon personality, skill, and tact of the individual nurse.

On the side of her work which involves prevention, detection, and care of disease, the nurse becomes the skilled helper of the school doctor, public health officer, and family physician.

In aspects of school administration she must act as assistant of school superintendent and principal. Where her work touches that of regular and special teachers in the school, intelligent and sympathetic co-operation is required.

In her contact with the home, wisdom, tact, and fine judgment are needed in order that information, suggestion, and inspiration may be furnished in a way to incite to better standards of living and a finer conduct of individual, home, and community. So far as the welfare of the child is concerned, such an adjustment and co-ordination of forces and persons are required as to permit no needless and wasteful overlapping of factors in the mosaic of influences intended for the protection and training of the child, and at the same time to leave no gap in this composite of forces which will result in neglect or injury.

The school nurse comes into the field of education to fill an important gap in the protection of the child's health and to supplement in various ways the sum of the influences intended for the improvement of individual, home, school, and community life. It is very evident that if

the school or district nurse is to be sufficient not only for strictly professional duties, but for the broader and indirect opportunities of her calling, this field of effort must command the finest type of womanhood in respect to understanding, sympathy, sound judgment, and practical tact in dealing with the manifold problems which she will meet. While some of the best elements of this nurse's ability can arise only from actual experience, yet a new, comprehensive, and varied type of training must be developed to supplement the technical education of the nurse and to prepare her as well as may be possible for this new vocation.

Closely related in certain respects to this profession of the educational nurse is the field of service and responsibility which must be developed in the near future for the woman who is fitted to take professional care of the infant and the "runabout" child below the kindergarten age. While most of the practical care of the baby relates to his physical life and needs, yet the mental and moral education of the child begins from the time of birth. Vital foundations of intellect, personality, and character are laid in the cradle and in the nursery. The simplest reactions of the central nervous system in infancy, and many of the early habits involved in the physical beginnings of life, form the germs of education and are of great potency in the determination of the final characteristics of the individual.

The most important part of education in some respects occurs before the child is old enough to enter the kindergarten or the school. The early care of the baby should be intrusted to a woman who not only is qualified to give the physical care required, but who is able to watch and guard the child with appreciation of the significance of all the factors at this first stage of development in relation to his future well-being.

The nurse-maid of the present is generally inadequate and incompetent. Her position in the family and in society is entirely beneath the right and dignity of a woman qualified to do this important work. The demand for well-educated women in this field will come naturally from the homes of the wealthy and well-to-do, where the conscientious, devoted care of the young is so often lacking.

Here, then, is the prospect of another new skilled profession for women which will call for as high a type as the fields of teaching and nursing. Provision must be made in the near future for the comprehensive training of children's nurses who shall be qualified to care for

the physical, intellectual, and moral beginnings of child development. The development of this field must, in time, influence favorably the standards of mother care in all types of society. These phases of nursing affecting the infant, runabout, and school child will help fill some of the glaring gaps of the present in the complete human nurture of the young.

THE EDUCATIONAL VALUE OF THE NURSE IN THE PUBLIC SCHOOL

ISABEL M. STEWART
with the co-operation of
M. ADELAIDE NUTTING

It is a significant sign of the times that so much attention is being paid to the health of school children. Medical societies, sanitarians, and public-health officials are concerning themselves seriously with the physical defects of children and with the spread of contagious diseases through the schools. Economists are accumulating a great body of statistics to show the enormous wastage of human life through the diseases of infancy and childhood, and the economic loss to the nation from this mortality, as well as from the serious weakening in efficiency and earning power, due to preventable and remediable defects. Philanthropic and charitable societies are concerning themselves chiefly with the social and moral aspects of the problem. The economic and industrial situation is complicated by the terrible prevalence of ignorance, due to the lack of proper teaching somewhere. The schools cannot evade some of the responsibility. Educationalists have always maintained the importance of the healthy body as a basis for the educational process, but they are just beginning to realize how large a factor the school itself is, in manufacturing defects, and in propagating disease in the community.

THE PROBLEM

It seems so obvious as to require no argument, that children in ill health should have attention, that the health of well children should be protected and conserved, that defects which interfere with mental development should be treated and, so far as possible, cured, that the school environment and educational method should at least not contribute to ill health. It is being stated freely that the evils of child labor are not all the results of commercial exploitation, that the crowded classrooms in some of our cities are close competitors with the cotton mills of the South, and that "our buildings, our curricula, our home study, are manufacturing more defects than the physician and nurse

and dispensary can correct.”¹ The Committee on the Physical Welfare of School Children in New York² found that 66 per cent needed medical or surgical attention or better nourishment; 40 per cent needed dental care; 38 per cent had enlarged glands of the neck; 31 per cent had defective hearing; 18 per cent had enlarged tonsils. These defects are not confined to the very poor, nor to the children of immigrant parents. Such statistics are before the public and are well known to educationalists. They have been fully presented to this Society in the first part of the *Ninth Yearbook*. In most enlightened communities boards of education and boards of health have combined to investigate conditions and to demonstrate the need of better sanitation, better teaching of hygiene, and medical treatment for these seriously handicapped children.

The medical inspector himself cannot do much to bring about better conditions. He must not even treat the children except for minor ailments. All he can do is to report what he finds, to exclude those children who are a menace to others, and to agitate for something to be done. It seems impossible any longer to fix the responsibility for the child's health exclusively on the parents. Because of ignorance, or poverty, or inefficiency in the home; because of the large proportion of the foreign element in our population, the employment of mothers in industry, the increasing congestion in cities, and the consequent overcrowding of classrooms, the school is compelled to take over many of the functions which formerly devolved on the home. There is thus an increasing accumulation of school functions relating to health. These may be cited briefly:

- a) Sanitary inspection of school buildings, systems of ventilation, etc., with special attention to the daily cleaning and the disinfection of schoolrooms and lavatories.
- b) Medical inspection for detection of contagious diseases and physical defects.
- c) Personal health examination.
- d) Hygiene of instruction.
- e) Emergency service and treatment of minor chronic complaints.

¹ *Ninth Yearbook*, 52.

² Professor Irving Fisher, *Report on National Vitality*, 74.

- f) Instruction of children in personal, home, and community hygiene and sanitation, and the practical application of the laws of health.
- g) Instruction of, and co-operation with, parents.
- h) Physical education.

METHODS OF DEALING WITH THE PROBLEM

It is perfectly evident that the existing organization is powerless to handle all these varied phases of the health problem. As a matter of fact the teaching staff is already so overloaded with duties that it could not seriously undertake more. But even where some attempt is being made to cover the field, it fails in effectiveness because of the lack of co-ordination of the various forces engaged. For instance, in the question of personal hygiene, four or five different instructors are already teaching the subject in different ways and from various stand-points—the regular teacher, the domestic science teacher, the supervisor of physical education, the special teacher of nature-study or biology, the school doctor, and if there is one, the school nurse. Yet, with some excellent exceptions, the subject is notoriously slighted, and there is little practical application of the principles of hygiene to everyday living.

Dr. William H. Allen says:

The teachers themselves, especially in the higher grades, are the first to acknowledge that they have no adequate training for the work, and are not themselves very correctly informed on questions relating to even sanitation and personal hygiene, and less on such subjects as the nature and control of infectious diseases, the prevention of tuberculosis, etc.¹

and again:

Superintendent Maxwell of New York City, and other educational leaders, urge teachers to do their utmost to learn the physical conditions and home environment of the individual child and to fit school treatment to the individual possibilities and handicaps. But experience proves conclusively that, try as they will, teachers and principals have neither the special knowledge nor the time to acquire the special knowledge to use the facts disclosed by the physical examination of school children.

Professor Irving Fisher² points out very clearly that in respect to school hygiene, it is not so much lack of knowledge, as lack of applica-

¹ *Civics and Health*, 286.

² *Report of National Vitality*, chap. ix, "Conservation through Personal Hygiene."

tion of knowledge, which is at fault. To be effective, this application must be made largely in the home where the trouble arises, and here is where the whole difficulty lies. The teacher or the specialist cannot be asked to take on the function of health visitor and sanitary instructor in the home.

There is then a very evident need for some organized expert agency within the school system, to co-ordinate these various offices connected with the health of the school child. This is not a new idea in education. Boards of education have already appointed trained specialists for the teaching of art, manual training, music, physical education, domestic science, etc. Why should we not have supervisors of health in the schools?

The difficulty is in securing the right type of specialist for such a varied line of activities. Dr. Snedden, in advocating such a system, says:

It should be noted that at present there are hardly anywhere men and women who can be put in charge of this work of educational hygiene, for men skilled in medical science alone cannot do it, nor can men who are only teachers. It requires a combination of the results of both kinds of training—in fact, a new field of applied science. But if the demand is once created, gradually a supply of trained workers will be available, for the field offered is certainly attractive to all who incline toward sanitation and preventative medical practice.¹

In the meantime we must look to those who are already in the field and try to determine which of the many types of specialist might best be intrusted with the present situation. We have already a very few specially trained physicians who combine a thorough knowledge of disease, its prevention and treatment, with a training in physical education and a knowledge of educational psychology and sociology. Such a person would undoubtedly be the one to direct and co-ordinate all the functions outlined.

For that part of the work which concerns itself specially with the prevention and treatment of diseases, it would seem that a very satisfactory basis would be found in the co-operation of specially trained physicians and nurses in a well-organized, adequately supported system of medical inspection in the schools. The history of the movement most significantly demonstrates the effectiveness of such a combination

¹ *Report of International Congress on Tuberculosis*, Vol. III.

wherever it has been tried, but its full possibilities have not really been tested. While acknowledging the control of the medical officers in everything that pertains to diagnosis and individual treatment, I wish to show that the nurse has a field here which is peculiarly her own; that she accomplishes through her close personal contact with the child and the home something which has not been accomplished in other ways; that she is a social, an educational, and an economic factor of great significance in this movement; and that an extension of her work would greatly increase the efficiency of the public school.

HISTORY AND DEVELOPMENT OF SCHOOL NURSING

Germany.—The development of the system of medical inspection in Germany has been fully discussed in Part I of the *Ninth Yearbook*. It will be noted that the duties of the school physician include such details as the inspection of buildings and playgrounds, lighting, heating, ventilation, choice of desks, and the hygiene of instruction, as well as the thorough and regular physical examination of the school children under his care.

The results of these examinations are reported quite fully to the parents, and if necessary the pupil is excluded until treatment is given. German parents evidently take their duties a little more seriously than either English or American parents, for there seems to be no serious trouble in securing their interest and co-operation in the treatment of defects or disabilities. In some cities a fine is charged for every day of non-attendance, where this is due to carelessness or negligence on the part of the parents. No attempt is made to treat the children in the school, or to follow them to their homes. Indeed the family physicians strenuously oppose any suggestion of treatment on the part of the school physicians. Their work with the children is confined to the investigation, diagnosis, and reporting of abnormal conditions and the exclusion of contagious disease. The poorer children are referred to dispensaries and clinics for treatment. As a rule the school physician has from 2,000 to 3,000 children under his care, and gives his services for a part of the day only, at a salary of from \$125 to \$200 per year. The teachers assist in the routine measurements and are taught to detect the common diseases of childhood. So far as can be gathered from reports, nurses have never been employed in the German system, nor in the continental schools generally. Yet it is stated "that out of

35,000 children examined for admission to school in Berlin in 1905, no less than 3,000 were rejected and sent back home, and 7,600 were put under special medical treatment."¹ It would seem that there is room for some home instruction even in Germany. Probably one reason why nurses have such limited opportunities there is because the nursing schools are largely under the domination of the religious authorities and have had less opportunity for development.

Great Britain.—In the International Congress of Hygiene and Demography in 1891, Dr. Malcolm Morris advocated the employment of a staff of specially educated nurses to visit the public elementary schools and inspect the children. This seems to be the first public suggestion of such a plan.

In England the work of school nursing preceded medical inspection in the present accepted sense. There was indeed one permanent medical officer in the city of London whose duty it was "to sit up in the central office and collect statistics."² In 1894 the managers of a school in a very poor district of London asked a district nurse to visit the school and do what she could to relieve the small ills of the children. Her work was found to be very beneficial, and was brought to the notice of one of the members of the London School Board, Miss Honnor Morten, herself a nurse and a prominent social worker and therefore better able perhaps to appreciate what was being done. No organized movement was made till 1898 when a voluntary "School Nurses' Society" was founded with the object of supplying visiting nursing to elementary schools in poor districts. Three nurses were appointed, each with four schools under her care. They treated the children sent to them by the teachers, followed the worst cases to their homes, secured medical attendance for those who required it, and everywhere taught and demonstrated the principles of cleanliness and simple hygiene. In one of its reports the School Nurses' Society briefly describes its purpose:

It must be remembered that the sore heel soon becomes poisoned if left to London dirt, and that the inflamed eyes often lose the power of seeing, simply through neglect. There is no more sure way of securing the health of the people than to arrest small ills at the beginning. A nurse can see at

¹ Dr. Frederick Rose, *International Congress of Nurses* (London); reported in *British Journal of Nursing* (November 20, 1909).

² Honnor Morten, "The London Public School Nurse," *American Journal of Nursing* (January, 1901).

a glance whether a child should be sent to a doctor, she can impress cleanliness, she can follow up bad cases to their homes, she can recognize the early symptoms of fevers and do much to stop the spread of infectious diseases that so often devastate our schools.¹

It was found that cases of bad eyes and dirty heads were practically stamped out of school by six months of regular visiting. The funds to pay the nurses and provide dressings were raised by voluntary subscription, and as soon as finances permitted, extra nurses were added to the staff. Efforts were made to interest the authorities and secure their co-operation. Through Miss Morten and Lord Breay, members both of the School Board and of the School Nurses' Society, permission had been granted in the beginning, on the express stipulation that no expenditure should be entailed in carrying out the experiment. Later the board graciously consented to provide a basin and kettle for the use of the nurse in each school, with the proviso that the outlay should not exceed three shillings for the two articles.²

Everywhere the same story was told of the schools—that they were centers of contagion, especially for such evils as pediculi and ringworm. A specially virulent form of ringworm having broken out in the London schools in 1900, the School Board cautiously appointed one nurse, at a salary of seventy pounds a year, to inspect the children's heads. There were three and one-half million children attending these schools.³

On the appointment of an active and intelligent physician (Dr. Kerr) as medical officer to the London School Board, the whole terrible condition of the children in the schools came before the public. In 1904 the work of the School Board was taken over by the London County Council and put under a progressive management. The London School Nurses' Society, having demonstrated the value of the nurses' services in the school for five years, now applied to the council to have the system taken over and supported by municipal funds. This was done and the staff of nurses was increased to twelve and later to fifty. But the character of the work, as determined by the County Council, was altered, so that the nurses were obliged to restrict their duties merely to reporting, excluding, and giving cards of instruction. Thus

¹ Honnor Morten, "School Nurses in England," *Charities and the Commons* (April 7, 1906).

² *School Board of London Gazette* (February 27, 1900).

³ Honnor Morten. See p. 19, n. 2, and n. 1, above.

the nurse is simply an inspector, and her work is robbed of its prime significance by the elimination of the actual nursing treatment, and the home visiting with its resulting educational benefits.

The example of London was speedily followed by Liverpool, Birmingham, and other big towns, and although some of them have secured municipal aid for their nursing staff, in many cases they are still paid by voluntary agencies. The effectiveness of medical inspection is proven to be dependent on the thoroughness and regularity of the doctor's visits, and the character of his work, but more than all on the co-operation of an efficient nursing staff.

Dr. Hayward, of Wimbledon, England, in his very interesting address given before the Jubilee Congress of District Nursing held in Liverpool, May, 1909, gives a vivid picture of the helplessness of a doctor working alone in a school. He says:

As a doctor I felt quite stranded in the strange atmosphere of an elementary school, coming into contact, not so much with actual illness, as with the primary conditions which produce and foster it. Dirt, neglect, improper feeding, malnutrition, insufficient clothing, suppurating ears, defective sight, verminous conditions, the impossibility of getting adequate information from the children or a knowledge of their home conditions; and nobody to whom one could give directions or who could help in examining the children. The only means of approaching the parents was to send an official notice that such or such a condition required treatment. My duties began and ended with endless notifications, and there it all stopped, as very little notice was taken of them.¹

United States.—It was from the work in London that the suggestion came for a nursing staff in the schools of New York. In 1897 one hundred and fifty medical inspectors had been appointed by the Board of Health to visit the schools each day, and inspect all children sent to them by the teachers. The great object was to safeguard the health in the schools by excluding those affected with contagious diseases. The first year 108,628 examinations were made and 6,829 children were excluded on account of some defect or contagion. In 1902 the exclusions had risen to 17,986. At the beginning of the school term it was said that from 15 to 20 children were excluded daily and sometimes as many as 300 out of a single school were out at one time. There was a protest from teachers and parents. Visitors from the settlements

¹ Quoted in *Visiting Nurses' Quarterly* (Cleveland, April, 1910).

found the excluded children playing on the streets with other children. The cards which had been given them were lost or thrown away; or the parents, failing to understand the meaning of the scientific names or the directions on the card, and unable to appreciate the purpose of the whole thing, simply did nothing. Miss Lillian Wald, head worker of the Henry Street Nurses' Settlement, who had followed the work of the school nurses in England, drew the attention of the Board of Health to this very serious condition of affairs and offered to place one of her staff of visiting nurses in the schools for an experiment of one month. The work of Miss Lina L. Rogers was a convincing demonstration of the value of the trained nurse in the public school.¹ Wherever it was possible she treated the child in the school and thus saved many unnecessary exclusions. The work was approved by Dr. Lederle, the commissioner of health, and by Mr. Burlingham of the Department of Education. In 1903, at the request of the Board of Health, \$30,000 was appropriated to extend the nursing service and put it on a definite basis. This provided a staff of 27 nurses at \$900 per year. These nurses attended 125 local and 4 parochial schools, with an attendance of 219,239 pupils. Under the new system the number excluded for the month of September, 1903, was 1,101, as compared with 10,567 for the same month in 1902. Since that time the New York staff has been increased to 141 nurses, including supervisors, all giving their entire time to the work.

Dr. Cronin of New York maintains that in a school population of 650,000, 30 per cent of the children were from 1 to 2 years behind their proper class. Of these backward children 95 per cent were so principally because of defects of eye, ear, nose, or throat, which could easily have been detected and remedied through effective medical inspection.² From the work of the school nurses he testified that "exclusion has been reduced 99 per cent, thus saving the city large sums of money and annulling all the obnoxious features of wholesale exclusion which, if continued, would contribute to truancy and illiteracy."³

¹ Lina L. Rogers, "School Nursing in New York City," *American Journal of Nursing* (March, 1903); "Nurses in the Public Schools of New York City," *Charities and the Commons* (April 7, 1906).

² *Report on National Vitality*, 73.

³ "Medical Treatment at School," *Report of Second International Congress of School Hygiene* (London).

It is stated¹ that when the child takes ten years to complete work which should take but eight, the cost of education is increased 25 per cent. It would thus be possible to work out on an economic basis alone the strongest possible argument for the employment of school nurses.

Under Dr. Darlington, the nursing service in New York was extended and further organized. He is unqualified in his commendation of the work as a supplement to medical inspection.

The present method of the medical inspection and examination of school children is noteworthy, for the practice of not only examining each child for physical abnormalities but for the method whereby the parents' attention is called to the presence of the defect, and repeated home visits are made by the nurses to explain and urge the necessity of treatment. During the school year of 1908-9, 323,344 children were examined; 242,048 were found to be suffering from some non-contagious physical defect. Of this number 203,488, or 84.06 per cent, were placed under treatment.

In contrast to that I might say that until this last year, the practice was to send a postal card to each parent with return postage. We had only two per cent of these cards returned, and we found that six per cent of the children underwent treatment until this last school year. Now 84 per cent are put under treatment. They are not treated by the Health Department, but by the clinics or family physician; the attention of the family is called to the trouble.

This result was made possible by the effective work performed by the nursing staff, and illustrates forcibly the value of individual contact in educational work of this nature.²

Miss Rogers, who was for some years director of school nursing in New York, reports:

The principals tell us that the condition in the school is 100 per cent better, and that the attendance has increased 75 per cent. What better demonstration can be given of the importance of keeping the children in good physical condition, to insure a proper frame of mind to receive the knowledge so freely imparted in the schools?

Again from the paper by J. A. Kalb, I quote:

A study of 1,400 children in New York was begun in the summer of 1906. These children had been reported as needing medical, dental, or ocular care, or better nourishment.

¹ J. A. Kalb, *Hygiene and Medicine in Relation to the School* (Columbia University thesis).

² *Woman's Municipal League Bulletin* (New York, January, 1910).

The futility of a physical examination without further action to insure medical treatment or hygienic environment was clearly demonstrated by re-examination in the spring. In the major number of instances these children were found to be worse than the first. Unless the work is followed up, no sufficient improvement will be made. The home conditions in so many cases are appalling, due to insufficient light, ventilation, and poor food.

The experience of New York in the matter of exclusions has been repeated in many other cities. According to Dr. Newmayer of Philadelphia:

In a school population of 157,500, the number of examinations made in April, May, June, and September, 1904, was over 700,000. Those excluded for contagious disease were 7,600. If school nurses had been provided, 7,000 of these could have remained at school, or lost but a short time.

Jane Addams sums the matter up in an address on "The Visiting Nurse and the Public Schools":

The best of medical inspection succeeds only in sending the child home; they say that such and such a child would have a bad effect on the other children, and therefore he is sent back to the family physician for treatment. In most cases a family physician is not called in, because, in the words of Artemus Ward, "there ain't none," and therefore the child is kept out indefinitely, and the public school, so far as that child is concerned, is doing nothing, and the child continues to play in the alley and on the streets or sit in the doors of the tenement with the rest of them.

This is the whole idea—that medical inspection was succeeded and almost transposed by the addition of the visiting nurses. The medical inspection got the child out of school, and the visiting nurse got the child back. It seems almost foolish to have medical inspection without the visiting nurse. Not that we would abandon the medical inspection; in no sense are they rivals, and in no sense is the nurse to make a diagnosis, but one without the other is insufficient and not to be tolerated. I am sure that here in Chicago we are working toward the nurses in the schools. We had them for one halcyon ten weeks, but owing to lack of funds and political difficulties, the ten weeks were all we were able to get.¹

This is the economic aspect of the nurse's work. There is another view of it from the public-health standpoint. Miss Lina L. Rogers says:

Possibly the most important of direct results and the most far-reaching came from the visiting of the homes, where the most unsanitary conditions

¹ *American Journal of Nursing* (1908).

were discovered: An entire family using the same towel where a child was excluded from school with contagious eye trouble; cases where the child sent home with a severe form of scabies was helping to finish and carry bundles of sweat-shop clothing; filthy yards where delicate children played; patients in the last stages of consumption, living and sleeping in the same room with the family.¹

From November 1, 1903, to May 12, 1904, 891 cases of contagious disease that had not been reported to the Board of Health were discovered in the homes by the school nurses.

Dr. Thomas F. Harrington, of Boston, makes a point of this in speaking of the prevention of tuberculosis:

The school nurse has opportunities to find the chronically ill which are not afforded to the district nurse, the dispensary nurse, nor to the social worker. All of these enter the homes after the case of tuberculosis has been discovered or reported. The school nurse, on the other hand, enters the home as the friend of the children, and there finds often the advanced case of tuberculosis, which otherwise would have gone unrecognized and unreported until death. When I tell you that the thirty school nurses in the Department of School Hygiene of Boston have visited 22,000 homes of school children during the past year, some magnitude of the opportunities afforded in this line may be imagined. I would urge that the greater part of our efforts against the spread of tuberculosis be directed toward the finding and the segregation of the advanced and the incurable cases of this disease. Here lies, I believe, the greatest hope for the future.²

Los Angeles was the second city in the United States to adopt the new plan. The work was begun by the Visiting Nurse Society and taken over by the city, three nurses being appointed for eighty schools.

In Seattle two nurses in six months visited 265 schools, inspected 15,947 pupils, and made 1,070 home visits; 1,452 children were treated for small ailments and cured, 947 improved, and 1,217 were still under treatment. 1,886 cases were reported to the medical inspectors, 397 children were operated on for the removal of tonsils and adenoids, 294 fitted with glasses, and out of 461 cases of pediculosis, 416 were cleaned up. The nurses took 28 needy children to physicians or orthopedic hospitals to be cared for.

In San Francisco in 1904, Miss Elizabeth Ashe and Miss Daisy

¹ *Charities and the Commons* (April 7, 1906), 69.

² *Report of the International Congress on Tuberculosis* (Washington, 1908), III, 584.

Johnston from the nurses' settlement worked for six months without remuneration, in the hope of convincing either the health or the education authorities of the necessity of some kind of medical inspection in the schools. They got no verbal or written acknowledgment of their services from either body, but were more than repaid by the appreciation of the teachers and children and the improved health and attendance of the latter. When the Board of Health put physicians in the schools, the nurses withdrew, owing to the complete lack of interest exhibited by the authorities. School nursing was however established in 1908 with a staff of five nurses.¹

In Chicago, Detroit, Philadelphia, Grand Rapids, Washington, Seattle, and other cities the work was begun voluntarily by the local visiting nursing associations, and later taken over more or less completely by the Board of Education or the Board of Health. In Philadelphia, Miss Anna Stanley has done rare pioneer work in the interests of school nursing. The Visiting Nurse Society offered her services and she was detailed to four downtown schools. Through her efforts, in four months contagious skin diseases were eradicated from these schools, and filth conditions were greatly reduced. Dr. Newmayer,² one of the most progressive of the medical inspectors in Philadelphia, says of her work:

The percentage of pediculosis existing in the schools where the nurse began her work in April, 1904, was 30 per cent. This has been reduced to 8 per cent. This is due to the influence of the nurse at the homes. Conjunctivitis and corneal ulcers received no attention from parents and were treated only after the children were taken in charge by the nurse. They were soon cured and the children able to resume studies. These cases included several in which corneal ulcer threatened the sight. Weak, anaemic children, unable to work or study, due to impoverishment from improper or no food, were visited in their homes and the existing difficulties corrected. Over 200 children with bad defective vision were treated and supplied with necessary glasses only through much persuasion and the persistent efforts of the nurse. This often required many home visits. The above reports show the remarkable results of medical inspection; but it requires the trained nurse to lend assur-

¹ E. M. Hickey, *Nurses' Journal of the Pacific Coast* (October, 1908); Elizabeth H. Ashe, *ibid.* (May, 1908).

² S. W. Newmayer, M.D., "Trained Nurses in the Public Schools as a Factor in the Education of the Children," *American Journal of Nursing* (December, 1906), 185; "System Employed by the Trained Nurse in the Schools of Philadelphia," *ibid.*, (January, 1907), 254.

ance that the advice given by the physician, in the cases he examines patiently day by day, is not thrown away. The medical inspector has accomplished much, but only with the trained school nurse, and her individual care, personal inquiry and knowledge of home life, is the highest degree of efficiency in education procured.

Dr. Witmer of the Psychological Clinic in Philadelphia, who has employed Miss Stanley's services in his hospital school for defective children, says of her that "if the school nurse becomes an accepted institution in the Philadelphia schools, it will be largely owing to her pioneer work, and to the support given the work by the Visiting Nurse Society." She started in 1904. In 1908, six school nurses were appointed by the Board of Education in Philadelphia.

It will be noted that in America and also in England, the initiative has usually come, not from the school board or often from the board of health, but from organizations or individuals outside the school. In many cases physicians have volunteered their services as consultants and occasional visitors for longer or shorter periods. In Miss Waters' recent work on *Visiting Nursing in the United States*, the records show very clearly that in most of the cities in the United States where school nursing has been established, the first move has been made by nursing organizations supported by private subscriptions. In many cases they are still carrying it on, often with little official recognition or co-operation, but with hope of the ultimate conversion of the authorities. In some places the work was started by a charity organization society, in others by a church, a woman's club, a fathers' and mothers' club, or a settlement; in one case a publishing company (*The Delineator*) supported several school nurses. It is but fair to say that the hesitation on the part of boards of education is due not so much perhaps to indifference, as to the inadequacy of the educational exchequer and a conflict of opinion as to what is the most immediate need. Sometimes it is due to a misunderstanding of the real purpose of school nursing. In a paper on "The Visiting Nurse in a Small City," Miss Crane, of Kalamazoo, Mich., writes:

Some time ago we applied for permission for our district nurse to undertake nursing in one of the public schools, thinking that if it proved a success we would endeavor to procure two nurses and do nursing in several of the schools, and that we would be able to give more careful attention also to the matter of tuberculosis. Permission was denied us, because of a plan in the mind of a member of the school board to introduce medical inspection by

physicians next year. We feel that even were there regular medical inspection, the visiting nurse is still a necessity to further the work of the physician.¹

This whole work of visiting nursing, which has been so successful in Kalamazoo, was undertaken by the Woman's Civic Improvement League of that city. There is no organized National District Nursing Association in America to cover the small towns and the remoter districts. In England, Scotland, and Ireland, where there is such a large organization established by the late queen and generously endowed in her memory, both city and country are well supplied with "queen's nurses." These district nurses have done much to provide more or less regular care and attention to the needs of school children, as well as to the poor in their homes. In Canada, the Victorian Order, a similar organization, has also done something toward establishing school nursing in two or three of the larger cities.

When Miss Waters' book was published in 1909, the following cities in the United States had more or less complete systems of school nursing.²

MUNICIPALITIES EMPLOYING PUBLIC-SCHOOL NURSES

State	City	Under Department of	Estab- lished	No. of Nurses
California	Berkeley	Board of Education	1909	1
California	Los Angeles	Board of Health	1903	4
California	San Francisco	Department of Health	1908	4
Colorado	Pueblo	Department of Education	1909	1
Georgia	Atlanta	Department of Education	1909	1
Illinois	Chicago	Department of Health	1908	41
Iowa	Des Moines	Board of Education	1905	2
Maryland	Baltimore	Department of Health	1905	5
Massachusetts	Boston	Department of Education	1905	34
Massachusetts	Brookline	Department of Education	1909	1
Massachusetts	Cambridge	Department of Health	1907	1
Michigan	Detroit	Board of Health	1906	2
Michigan	Grand Rapids	Board of Education	1905	3
New Jersey	Jersey City	Board of Health	1907	2
New Jersey	Orange	Board of Education	1906	2
New York	New York	Department of Health	1902	141
New York	Syracuse	Board of Health	1908	2
Ohio	Cincinnati	Board of Health	1909	2
Ohio	Cleveland	Board of Education	1908	2
Oregon	Portland	City of Portland	1908	1
Pennsylvania	Harrisburg	Board of Education	1908	1
Pennsylvania	Philadelphia	Board of Education	1908	6
Washington	Seattle	Board of Education	1908	2
Washington	Tacoma	Board of Education	1908	1

¹ Caroline Bartlett Crane, *Charities and the Commons* (April 7, 1906).

² *Visiting Nursing in the United States*, 367.

THE FUNCTIONS OF THE SCHOOL NURSE AND VARIOUS ESTIMATES OF HER VALUE

The functions of the school nurse vary widely, each city or town working out its own system according to its needs and the special features of its organization. The question of expense is probably the largest determining factor. Some of these functions may be mentioned briefly.

a) Assistant to the school doctor in his visits of inspection—preparing children for examination, recording data, testing vision, hearing, etc.

b) Routine daily, weekly, or monthly inspection in classrooms.

c) Keeping of records, sending out reports to parents, cards to principals, etc.

d) Treatment of routine cases in the school—bathing eyes, irrigating ears, dressing wounds, etc.

e) Emergency service—caring for accidents, fainting, convulsions, etc.

f) Instruction of children in personal hygiene and sanitation—practical demonstrations and talks.

g) Follow-up work in the homes—notifying physicians, instruction of mothers in the care of children, taking children to dispensaries, dental clinics, etc., for treatment, when necessary.

h) Sanitary inspection of homes—discovering and reporting contagious diseases to Board of Health.

i) Reporting of truancy cases.

j) Teachers' and mothers' meetings.

k) Summer work in prevention of infant mortality—playground supervision, fresh-air excursions, etc.

In no one system are all these functions incorporated. Indeed, the staff of nurses is usually so entirely inadequate that only the most needy and pressing cases can be attended to. Some authorities consider one feature of the work of surpassing importance, others emphasize quite a different feature. But so far as the literature on the subject may be trusted, there seem to be no two opinions regarding the value of the nurse's work. Doctors, teachers, social workers, parents, and children are almost unanimous in their approval, and the best part of it is that the nurses themselves are enthusiastic over its possibilities.

It may be well to quote here the opinions of a few additional authori-

ties on the subject. The school physicians are the ones who ought to know best whether the nurse has made good in the field of health inspection. Dr. Newmayer, of Philadelphia, has written much on this phase of medical inspection.

The results obtained with little friction among doctor, nurse, the parent, and school teachers, are the best evidence of the success of our system. . . .

The weak point in medical inspection lies in the fact that it brings to light conditions over which we can have very little control. We cannot alter the home environment or compel attention to any directions given. It is possible however to influence and instruct at the homes, and this can be best effected by the aid of a well-trained nurse. I look upon the services of a nurse as one of the most essential factors in any system of medical inspection. . . .

There are various problems to be solved in each case and the nurse invariably finds the remedy. The duties of the school nurse assure success to the work of the medical inspector in improving the health of the school children.

Dr. Helen C. Putnam, whose work in medical sociology is so well known, in an address given at the Second International Congress of School Hygiene, London, remarks:

Medical inspection instructs indirectly but forcefully by drawing attention of pupils, parents, and the public to communicable diseases; to care of the person, general health and development; to school furnishings, lighting, ventilation, and playgrounds; but instructs most efficiently where school nurses are employed. It means much in two of our largest cities where from fifty to eighty thoroughly trained nurses not only attend to the minor ailments at the schools, but daily radiate therefrom into homes, showing mothers details of cleaning, feeding, clothing children and of caring for the premises. The immediate result observed is that the pupils sent from school by the physician return sooner and in better condition, and that many otherwise unknown wrongs to childhood are reported to proper authorities for correction.¹

It is interesting to note the change in the textbooks on school hygiene within the last few years. In *Medical Inspection of School Children*,² published in 1904, there is a most thorough treatment of the subject of physical examinations, anthropometry tests, etc., and the authors show the new social standpoint in their recommendations for the investigation of housing conditions, the economic and wage-earning capacity of the parents, the healthiness or unhealthiness of local occupations,

¹ *Report of Second International Congress of School Hygiene*, 924.

² W. L. MacKenzie, M.D., and Edwin Matthew, *Medical Inspection of School Children*.

conditions determining food-supply, of the feeding of infants, of the nurture of mothers before and after child-birth, and of many other conditions, customs, etc., which so directly influence the health of school children and of the race. But while they recommend women sanitary inspectors for some of this work, only in one brief note describing the New York system do they mention nurses. They define the function of medical inspection, as the collecting of data as a basis for correct inductions, rather than the actual, immediate remedying of conditions.

More recent writers go farther, and in most of the works published within the last four years one chapter or more is devoted to the school nurse. A. H. Hogarth,¹ of London, writing in 1909, says:

The school nurse represents as new an idea in the school world as the school doctor. She is not a nurse in the usual acceptation of the term, but a woman who has had the scientific training of a nurse. On the other hand she is not merely a sanitary inspector or a health visitor. She is an education officer employed by an educational authority for certain routine medical duties in connection with education. As in the hospital, so in the school, she is the doctor's assistant and works under his direction.

In *Civics and Health*, published in 1908, Dr. Allen repeatedly emphasizes the value of the nurse, not only in the school but in almost all kinds of social-service work. Here he speaks particularly of an investigation by the Bureau of Municipal Research in New York to determine the reason for the ineffectiveness of medical inspection, under the older régime. Where home visiting was established—

the net average result of a day's work by a nurse was the actual treatment of over five children, three of them completely, and two of them for one or more defects, sixty cents per child!

Having established the willingness—even eagerness—of parents to do all in their power to remove defects that handicapped their children, it was obviously the duty of the health department so to organize its work that it could insure the education of parents.

So conclusive were the results of follow-up work efficiently supervised by the Department of Health, that school officials are, for the present, inclined to waive the demand for the transfer of physicians and nurses to the Board of Education, and to substitute education for compulsion with parents who obstinately refuse to take proper remedial measures for their children when reported defective.²

¹ A. H. Hogarth, M.B., *Medical Inspection of Schools*, chap. xii, p. 172.

² W. H. Allen, *Civics and Health*, 299–300.

Ralph H. Crowley, M.D., writing of the "Hygiene of School Life" in 1910, quotes the Board of Education of London as reporting that they are satisfied that this work offers a great field of valuable service for the school nurse, and they recommend that wherever practicable, education authorities should secure, especially in rural districts, the benefit and *true economy* which may thus be obtained.¹

He further states that

the two main requirements of medical inspection are: first, that children should receive treatment; and secondly, that the treatment should be adequate.

The writer's own experience in the past has been that not more than about one-third of the parents notified have paid attention to such notices, and the reason undoubtedly in many cases is because the parents do not believe that the defects are such as are worth troubling about. The further opportunities now available for making inspection and reinspection more thorough, for interviewing parents or sending a nurse or health visitor around to the home, will undoubtedly lead to a much larger number of children receiving attention than heretofore.²

The superintendent of schools of Los Angeles, Cal., writes that one school nurse, through her untiring efforts, has created a sentiment of cleanliness not only among the scholars but among the families in certain sections of the city.

In *Medical Inspection of Schools*, published in 1908, the work is presented from the standpoint of both the physician and educationalist.

To sum up the case for the school nurse—she is the teacher of the parents, the pupils, the teachers, and the family in applied practical hygiene. Her work prevents loss of time on the part of the pupils and vastly reduces the number of exclusions for contagious diseases. She cures minor ailments in the school and furnishes efficient aid in emergencies. She gives practical demonstrations in the home, of required treatments, often discovering there the source of the trouble, which, if undiscovered, would render useless the work of the medical inspector in the school. The school nurse is the most efficient possible link between the school and the home. Her work is immensely important in its direct results and very far-reaching in its indirect influences. Among foreign populations she is a very potent force for Americanization.³

¹ R. H. Crowley, *Hygiene of School Life*.

² *Ibid.*, 163-64.

³ Gulick and Ayres, *Medical Inspection of Schools*, 80.

ATTITUDE OF TEACHERS TO SCHOOL NURSING

As might be expected the teachers were not all at first favorable to the new plan. Hogarth says:

The functions of a school nurse are likely to be extended in many directions, but if the teachers are not in harmony with the work, difficulties will inevitably arise. Experience in London, however, has shown that the majority of teachers, so far from objecting to the nurse, have constantly asked for more frequent visits and have, from the first, taken a pride and interest in the cleanly condition of the children attending their schools. Such co-operation is essential for a satisfactory and efficient school nursing service.¹

The following is the testimony of a school nurse:

At first a number of school teachers, and even principals objected, but a very short time served to show that these could be classified into three groups. Those who did not understand just what school nursing meant and feared that it would result in interfering with the school routine or lower the attendance, when convinced that such was not the case became ardent advocates of it. Next came those who feared that part of the funds necessary to maintain the work were to be deducted from the already slender appropriation of the Board of Education.

The third group consisted of those who were old-fashioned and firmly believed that measles, scarlet fever, and diphtheria were dispensations of Providence, which everyone *had* to bear sooner or later, and the sooner we had them and got over it the better; also that pediculi, ringworm, impetigo, and scabies were afflictions of childhood, unpleasant to be sure, but not to be avoided. The members of this group withdrew into their shells, as it were, and dismissed the whole subject of medical inspection as one more "fad" which had to be thrust upon them. They neither assisted nor hindered, they simply ignored. They saw none of the good accomplished, but mentally filed for future reference any mistake or unpleasantness which occurred.

Lastly (and to their credit this group was extremely small) came a few narrow individuals who felt that the school and all it contained was their personal property, and that any person coming into it must necessarily be guided by what they thought. *They* preferred to say whether a child should be excluded or readmitted to school; what rooms routine inspection should be done in, and how frequently. In short, *they* wished to conduct the medical inspection of the pupils, not according

¹ Hogarth, *Medical Inspection in Schools*, 186.

to the ideas of the medical inspectors and school nurses, whose professional training qualified them for the work, but according to their own personal whims and fancies.¹ Most of the school nurses however speak with the greatest appreciation of the co-operation of teachers and principals in their work.

ATTITUDE OF CHILDREN AND PARENTS

The appreciation of the children is often amusing and always gratifying. They become very much attached to the school nurse and sometimes invent the most impossible ailments so they may consult with her. Every child loves to be mothered and a nurse should be essentially "a mother." They have the greatest faith in her powers. A little boy in Liverpool was found dragging his infant brother along to the school "to get the lady to cure his eyes." When the school nurse visits the homes, they all crowd around her, bringing their babies for her inspection, and insisting that she visits every sick man, woman, and child in the tenement or in the street.

The parents are not always so easily dealt with. One meets everywhere the unalterable conviction that dirt is healthy, vermin inevitable, and sickness just luck. The mother who knows all about ringworm because all her children had it and persists that "if they *are* to git it, they *will* git it," is not easily convinced of the possibility of its absolute prevention. She "don't 'old with fightin' Providence," but pins her faith to the good old treatment of "hink and tobacco hash." Some mothers object to all this fuss about cleanliness because they "don't want their children to get too high-toned." Another knows that if we were intended to wear glasses we'd be born with them, and presents the unanswerable argument that "if adenoids are not good for people, why were they put there?" They have an astonishing faith in the gospel of "things as they are." The foreigners are often suspicious and seem to be unable to grasp the idea of any person doing anything for them merely from a desire to help them. The men, who have some little acquaintance with the ways of the street, are willing to bet anything that the doctors and nurses are getting something out of this thing "on the side." But the mother who meets the nurse with a perfect torrent of abuse and declares with much emphasis that she never will allow anyone "to take

¹ C. R. Kefauver, "Obstacles in the Path of the School Nurse," *American Journal of Nursing* (August, 1909).

out Johnny's eyes and scrape 'em," is quite mollified when she knows the real reason and extent of the operation, and ends by inviting the nurse to "stay to tea."

The work requires endless tact, patience, and real sympathy with, and understanding of, the people. Miss A. W. Kerr, who directs the work in New York, says:

There are many pitfalls in the way. The nurse must not diagnose cases, she must not interfere with any physician's practice, she must not antagonize the family, and she must know their language, understand their customs, and respect their pride. She must see that defects are corrected, glasses supplied, that tea and coffee are cut out of a child's diet and milk and eggs substituted.

She is always running up against difficult situations, national prejudices, and national customs. To deal with these wisely requires no small knowledge of psychology and sociology, as well as a practical insight into actual conditions.

It is all very well to say in general, give meat or milk or eggs, but when these articles are seldom or never used, it is better to say to an Italian mother, "Give to Theresa less spaghetti and more oil," or to a Russian one, "Do not let Katia have so much kale, but give her plenty of noodles." That is practical advice and is likely to be followed.

In persuading the parent to attend to such defects as adenoids, bad vision, etc., the wise visitor studies the dominant national traits of each group and appeals to these. In an American community it is national pride—the desire to have the American child equal, if not superior, to every other. In a Swedish community it would be shown that removal of physical defects renders a child brighter and more successful in life. In a Jewish district, the ultimate saving in increased earning capacity that results from better health, and the great financial waste of sickness is the dominant argument. Above all, the public needs to be constantly educated in one thing—that is, that it as tax-payer is maintaining the boards of education and of health, and that it has the greatest reason for demanding the highest interest on capital invested.

But the results are on the whole encouraging, and the nurses see the fruits of their labors, and receive much real gratitude. The following is one of the hundreds of such testimonies:

DER NURS: I lov yu becos yu mak wel mi mary. It is gud dat de schul has such a gud womin to luk after de childen. mi usband tanks yu to. God bles yu.

SCHOOL NURSING IN RELATION TO THE MEDICAL PROFESSION

The family physician has resented the offices of the school nurses in some cases on the ground that they defraud him of his rightful practice. This is not perhaps without some reason. It is very hard for her to know always when a family is able to pay for treatment and when the child ought to be taken to the dispensary. Then professional grafters *have* been known to invade even a system of medical inspection, using their office to secure patronage either for themselves or their friends. Here between her rigid code of professional ethics and her desire to do the best for the child and the family, the nurse is surely in a difficult position.

It is an old tradition, fostered by the military system under which trained nursing came into being, that the nurse's first and only duty is to obey orders. The doctor is the captain and she is the private, and she is there not to question nor even to understand his mandates, but simply to do what she is told. There are still many physicians who hold that obedience is the only requisite in a nurse, and who jealously oppose any system of training or any plan for raising educational standards which might give her a broader understanding of her problem, and thus increase the scope of her labors. Such men are filled with apprehension at the powers which are being placed in the hands of the school nurse, particularly in the detection of pathological symptoms and abnormalities, which they consider to be really the assumption of her ability to diagnose disease.

It may as well be emphatically stated that it is no part of the school nurse's plan to supplant the doctor either in the school or the home. She is there to supplement him, to carry out his instructions, and to see that they are made effective. But she does more than this, as has been shown; her function in the school is largely a social and educational one. She does not covet the field of medical practice; her own field is an ample one, rich in opportunities, wonderful in its possibilities, and fruitful in its results. It offers scope for all her highest faculties, and presents large problems for investigation, for development, and adjustment.

Some of the difficulties encountered are doubtless due to the nurse herself. She has not always been the best person for her place, and neither her school nor her hospital training has fitted her fully for her work in this new social field. She herself is in process of evolution, and only as she

adapts herself to the special needs of the situation has she any hope of ultimate survival. I have attempted to show by the history of medical inspection that the visiting nurse *has* done this in a rather effective way in school nursing, and that she is the logical person for any such work. But this is not to say that all nurses are fitted to be school nurses, any more than all teachers are fitted to be kindergartners.

Many nurses are essentially doers and not teachers, many do not care particularly for children, others grumble at the routine of school work, and prefer the more varied and strenuous experiences of hospital or district work or the more lucrative service of private nursing. A more careful selection of school nurses on the ground of personal qualifications and professional training would obviate many difficulties.

OTHER TYPES OF SCHOOL WORK IN WHICH NURSES ARE ENGAGED

It is not only in the ordinary school, however, that the visiting nurse comes into contact with the children and demonstrates her value as a teacher and promoter of health. In open-air schools for anaemic, tubercular, or convalescent children, she is employed in more strictly nursing duties, seeing that the little patients are warmly clad, watching for signs of fatigue, attending to matters of diet, etc. In schools for defectives and cripples, in institutions for the blind, in reformatories and all such institutions where the physical condition is so often the key to mental and moral improvement, nurses are employed in increasing numbers. In the home and school visiting work undertaken by the Public Education Association of New York, it happened last year that three out of five of the visitors appointed had been district nurses. Their duties did not primarily relate to health at all, but it is found that the wide practical training of the visiting nurse gives her social insight and an easy entrance into the homes. It might be added that two at least of these nurses had been formerly teachers, not at all an unusual combination among nurses. This makes them as much at home in the schoolroom as the hospital ward or the sick room, and makes an excellent basis for the specialized training in psychology and sociology which is needed for work with defective and delinquent children. Dr. Witmer speaks of the great value of such a teacher-nurse employed in his hospital school for defective children in Philadelphia.¹

¹ Lightner Witmer, Ph.D., "The Hospital School," *Psychological Clinic* (October 15, 1907).

Some of the large residential 'schools and colleges now engage a trained nurse to attend the cases of illness, but it is significant that emphasis is being laid more and more on the preventive rather than the ameliorative aspect of her work, so that she is really a supervisor of health in the dormitories. Statistics show a marked decrease in small ailments and in contagious diseases, and an improvement in the general health of the school body, where this work has been carried on intelligently and faithfully.

TUBERCULOSIS WORK

Some mention should be made of other activities where nurses are engaged, which touch the educational problem rather intimately. The societies for the prevention of tuberculosis are convinced that if they can only teach the school children the practical, vital principles of sanitation and the simple facts about tuberculosis, it will be a most important contribution to the suppression of a world plague. Very little can be done with the mothers and fathers whose habits are more or less fixed and who on account of fatigue or despair or simple indifference have lost the power of readily assimilating new ideas. But the children are alert and impressionable, and their co-operation is easily secured. In some cities from 30 per cent to 50 per cent of the school children are already infected with tuberculosis and in all schools many will inevitably contract the disease. Dr. Farrand says at the lowest estimate there are now in the schools of the United States 150,000 children who have well-marked symptoms of tuberculosis. The application of a few simple hygienic and sanitary rules would save a great number of those children. If they can only be made to feel the importance of the problem, there is hope that the homes of the future at least will be made comparatively safe.

In Pittsburgh and Cincinnati where the anti-tuberculosis propaganda is particularly active, a nurse is employed for the public-school work. With the permission of the school board and the co-operation of principals and teachers, she arranges for talks in every schoolroom or, in some cases, for larger groups in the assembly halls where she has a lantern and stereopticon views. These talks are very short and simple, suited to the age and character of her listeners. The aim is to give an elementary working knowledge of tuberculosis and how to combat it. Illustrations are used, exhibits are set up in the schools,

and attractive illustrated circulars are distributed afterward, with instruction that the children are to take them home and explain them to their parents and friends. Sometimes they write essays on the subject, and their work shows a remarkably clear understanding of the main points involved.¹ Dr. John M. Withrow, superintendent of the Cincinnati League, writes:

I cannot speak too heartily in favor of education in the schools as a means of promoting our work. We have found it here to be one of the especially effective and popular features of our work. I am inclined to think that it is the best means of reaching into the home.

Dr. White of Pittsburgh, speaking at the Sixth International Congress on Tuberculosis in Washington, 1908, says:²

I wish to call especially to your attention the educational work in the schools. No one can do municipal work without being convinced that it cannot be done without a trained nurse, but her duty is that of an educator, and there is no one who can enter the home as readily as the nurse can do, and as a woman can do. We must take the impressionable age, and that is childhood. You must accomplish results by repetition; results will come in time. Remember that unless we have systematic efforts in education they will not be of much value. We must continue year after year to do this work if we are to obtain results.

In both these cities the nurse gives talks to mothers, to working girls' clubs, Young Women's Christian Associations, and other groups of women. In Cincinnati the school instructress, as she is called, addresses also the pupils in the parochial schools, and the priests have invited her to talk to the Sunday-school children on Sunday afternoons. But the talks in themselves are useless unless the subject is made concrete and practical. Almost none of them, children or parents, grasp the significance of what they see and hear, except as it is interpreted to them and related to their lives. If such work as this could be made a feature of public-school instruction throughout the country, we might reasonably expect a marked fall in the death rate, not only from tuberculosis but from other preventable diseases. Results are seen already in increased attendance at clinics, more intelligent treatment of the sick, and more sanitary conditions in the schools and homes. This is

¹ Bertha L. Stark, "Anti-Tuberculosis Work in the Pittsburgh Public Schools," *Report of the Sixth International Congress on Tuberculosis*, III.

² *Ibid.*, 583.

only one phase of the general campaign of education in the homes, dispensaries, hospitals, sanitariums, and everywhere. The moving-picture show is the latest addition to the teaching forces, and will doubtless help much in interesting the children. This school work has been taken up in Columbus, Cleveland, Philadelphia, Hamilton, Ontario, Hartford, Connecticut, Salem, Massachusetts, and Washington, D.C., on the same plan, and many other cities have written asking for information and copies of the literature distributed. Inquiries have been received from Russia and other foreign countries.¹

I quote Dr. Darlington again in regard to the need for this teaching and the peculiar function of the visiting nurse:

In all large communities, the poorer element of the foreign-born population presents the greatest problem encountered in municipal health work. Diversified in their habits, often superstitious and resentful of any interference with their mode of life, oppressed by poverty, frequently ignorant or neglectful of the simplest sanitary requirements, their assimilation as citizens of their adopted country comes only as a result of education—persistent, inclusive, and never-ending.

In public-health work this education is brought about by various means. Lectures, printed instructions and publicity in all its forms are used, but the most valuable and effective form is found *in individual instruction in the home*. Personal efforts, advice, instruction, and demonstration offer the most practical and effective means, and we have found the employment of trained nurses for this purpose of inestimable value.

Dr. Livingston Farrand, secretary of the National Society for the Prevention of Tuberculosis, in a recent lecture at Teachers College, said that after all the forces of prevention and cure have been set in operation—exhibits, lectures, sanitarium, preventoria, dispensaries, etc.—he believed that the most important work of all would still be the actual teaching and treatment of the cases in the homes by visiting nurses.

Dr. Osler never loses an opportunity of magnifying the nurse's office:

The district nurse is a ministering angel everywhere. If I were not a man, I would rather than anything else be a district nurse. The work they do in connection with tuberculosis is of the greatest value—visiting the patients, watching over them, advising them, teaching them how to lead rational lives.

¹ *The Tuberculosis League of Pittsburgh* (published monthly).

Dr. Edward Trudeau, of Saranac, the great apostle of the movement in America, says:

In regard to my opinion of the value of the district or dispensary nurse in the combat with tuberculosis, I have always felt that the nurse's visit to the house and her personal contact with the people were *essential* to any degree of success in diminishing infection in the home. . . . People who won't go to lectures, won't read and won't do anything they hear from their associates they ought to do, will gather around a nurse in their own homes and appreciate at once how simple are the measures necessary for their protection. I think the nurse a most indispensable weapon in the great warfare and that she perhaps accomplishes more in practical prevention than any other agency.

INFANT MORTALITY

It is the same story with infant mortality. Both of these great destroyers of life, tuberculosis and the diseases of infancy, affect the school in a very vital way. Sir James Crichton-Browne makes the statement that:

Of all infants born in our large towns, some 20 or 30 per cent are visibly damaged at the time of birth, and of the 70 per cent or 80 per cent that pass muster then, some probably bear in their nervous systems hidden marks of maternal privation that will come to the surface by and by.¹

It seems more and more evident that if the race is to be radically improved, it is necessary to begin before school age, indeed before birth in the education and care of the mother, and later in the protection of the child. Physicians, philanthropists and educationalists, domestic-science experts and vital statisticians are all working toward the solution of this big problem. Dr. J. H. M. Knox, assistant in pediatrics at the Johns Hopkins Hospital, voices the opinion of many experts when he says:

There is no person in the community who can be of equal assistance in the prevention and cure of diseases among infants, to the trained nurse. . . . From considerable experience in milk-station work, I am glad to acknowledge that fully one-half of the benefits from the distribution of pure milk to babies, comes directly or indirectly through the instruction and friendly visiting of nurses.²

In the recent Conference of the American Association for the Study and Prevention of Infant Mortality, practically every paper emphasizes

¹ *Report of International Congress of School Hygiene*, 96.

² *Visiting Nurses' Quarterly* (Cleveland, July, 1910).

the absolute necessity of the nurse's teaching in any adequate campaign against infant mortality.

In summer, the school nurses employed by the Board of Health in New York are distributed through the various districts of the city, co-operating with the nurses of several other organizations in teaching the mothers and caring for the health of babies. They visit each child whose birth has been reported by a midwife, inquire into conditions, especially in reference to eye-infections, and instruct the mother in the care of the baby, including hygiene, feeding, clothing, bathing, and the value of fresh air. Repeated visits are made to see that these instructions are followed. When it is considered that over 45 per cent of the births in New York City are attended by midwives, usually of the most ignorant type, the magnitude of the work will be realized. Dr. Darlington reports:

The midwives soon learned that the nurses were visiting their cases, and manifested great interest. They informed the mother that the nurse would call, and that her instructions must be carefully obeyed; they sought instruction for themselves and followed the methods advised, and the reports of improved asepsis and better care on their part can be counted as not the least of the results of the nurse's work.

This year the nurses have made a total of 106,772 visits, 770 sick babies have been treated by the Department of Medical Inspection, with a total of 1,850 visits. 4,888 cases have been referred to other agencies of the Conference for aid or treatment.

I quote from a personal letter from Dr. Josephine Baker, who is the head of the Department of Child Hygiene under the Board of Health, and who has direct control of all this work.

Nurses are assigned to various recreation centers, milk depots, and diet kitchens throughout the city, and at these centers, in connection with the doctor who is also assigned to this duty, they hold clinics for the instruction of mothers. This work is carried on wholly with the idea of prevention of the diseases of infancy, particularly the gastro-intestinal diseases. If sick children are found they are cared for by the nurse acting under instructions of a department physician. I am glad of the opportunity to heartily commend the work of the nurses in this department. I consider it a most valuable feature of the work the department has done in preventive medicine, and that it opens a large field for the trained nurse. During the past summer, including the months of June, July, August, and September, 3,383 children under two years of age died from diarrhoeal diseases. During the summer

of 1908, the same months, 4,180 children died. This reduction is undoubtedly due in a large part to the campaign of education which has been carried on so persistently during the past year.

In Philadelphia results showed 36 per cent less infant mortality in the districts covered by the municipal nurses than in the rest of the city as compared with the preceding year, notwithstanding that the summer was the most trying one in thirteen years.¹

The plan for "little mothers'" classes in the schools of New York was an extension of the work for the prevention of infant mortality. The classes are started in early summer and are continued through the holidays. The older girls, and sometimes the boys, who are in charge of babies at home, join the "little mothers'" clubs, and there is considerable competition among them, for as yet there is a restricted membership. A girl who is not so fortunate as to possess a baby adopts her neighbor's so she may qualify for membership. Talks are given by the doctor or nurse and a real live baby is secured if possible for the demonstrations. The children show the greatest enthusiasm over the bathing and feeding and caring for the baby, and carry out their instructions very faithfully, often in the face of much good-natured protestations from their mothers and the neighbors. But the foreign peoples have great respect for the wisdom of the public school, and where the "little mothers" are taking command, pickles and sauerkraut are disappearing very gradually from the baby's rations and, at the first sign of illness, it is hurried to the nearest milk station or dispensary for expert advice.

It is significant that a corps of school nurses should have been so largely identified with this great work of child-saving. It points to an extension of their functions which will enable the school to "begin early" in preparing its pupils for education. There is some indication that the cities are waking up to the economic significance of this movement.

In New York City we have asked for and hope to receive an appropriation sufficient to employ a staff of nurses large enough to continue this work throughout the year. It is an economic truism that the saving of life and the preservation of health offers greater value to the state than can be gained in any other way. Governments must conserve the health of the babies and the

¹ Paper by Dr. Joseph S. Neff at the Conference of Infant Mortality in Baltimore, 1910.

children if they are looking to the future and virility of their citizens, and money, time, and effort can be expended in no more worthy purpose.¹

In Boston, where medical inspection is under the Board of Education, the nurses are detailed for playground work during the summer. Sometimes they take parties of children to the country or seashore, and in other ways look after their physical welfare. In every city they co-operate with the visiting nurses' societies, milk stations, summer camps, and other social organizations.

THE ECONOMIC VALUE OF THE VISITING NURSE

The wide possibilities of the work in the family and the co-operation with other social forces is indicated in an extract from a paper on "The Visiting Nurse":

I ought to speak too of the great indirect benefit to the community of a visiting nurse who is alert to render all possible services. As she comes to know a family well, she can often put her finger on just the economic or sanitary shortcoming of that family which keeps them poor or makes them sick. She is able to point out the folly of the cut-throat chattel mortgage; the grocery credit-book; the unnecessary furniture purchased so dearly on the alluring instalment plan; the ruinous economy of living in dark rooms or amid insanitary surroundings because "the rent is so cheap"; the suicidal policy of taking the children prematurely out of school to put them to work.

She reports to the charities organization headquarters cases of destitution or of lack of employment, . . . violations of sanitary regulations, and violations of the child-labor law.²

Again Miss Wald says:

But the nurse has been more generally accepted as the conveyor of education to the individual, the interpreter of the movement to the people, the guardian of the parents and, indirectly through her supervision of them, the policeman for the community. The educational value of the technically trained and socially aroused nurse is of great importance, but her best social value lies not primarily in her office as a carrier of education, but in the clearness and force with which she makes known and understood the patients' accompanying disease of poverty. Teaching individual hygiene, impressing upon the poor consumptive the last word of science upon the healing value of sunshine, importance of limited hours of labor, good food, etc., would many times appear to be cruelly sardonic were it not for the confidence that she

¹ Dr. Darlington, Address to the Woman's Municipal League, January, 1910.

² Caroline B. Crane, *Charities and the Commons* (April 7, 1906).

(the nurse) is playing her part to urge on the regeneration of living, housing, child-protective and wage conditions. No one sees as well as she—not even the physician—all the misery, the heroic struggles, the ignorance and superstition in the double struggle against poverty and illness. Her force must be tested by her clearness in making these conditions known, as well as by her intelligence in caring for her patients and by her value as a teacher.¹

A very interesting demonstration of the economic value of the visiting nurse's services has been given during the past two years in New York. The Metropolitan Life Insurance Company has been instituting a plan of working men's insurance under Mr. Lee Frankel, who was formerly head of the Hebrew Charities. Miss Wald, of the Henry Street Nurses' Settlement, quickly saw the possibilities in the weekly visiting of the insurance companies' collectors, and asked for the co-operation of the company in reporting cases of illness found in these homes. This led to an arrangement between the company and the settlement, by which the company paid at the rate of so much per visit for all attendance on its policy holders. A very complete system was arranged and the results carefully tabulated for one year. They were convinced that nursing care and the constant instruction of the visiting nurses would effect a decrease in the morbidity rate and enable policyholders to get to work sooner and keep in better condition. It proved to be *an economic gain* to the insurance company and the system has already been established in a great many other cities. Other progressive organizations, department stores, factories, etc., engage nurses not so much to care for sick employees as to look after their comfort and well-being, to tell them how to care for themselves and to *keep them well*. This is not a philanthropy—it is a business proposition.

IS THIS NURSING WORK? FLORENCE NIGHTINGALE'S CONCEPTION OF NURSING

It has been noted that in all this preventive and remedial work the services of the nurse as *teacher* and *social worker* are held to be of supreme importance. She has been so closely associated in the public mind with the actual bedside treatment of the sick, that this new work is viewed as something of an anomaly. But Florence Nightingale saw it clearly from the first. As the founder of trained nursing and herself the great-

¹ Lillian D. Wald, "Educational Value and Social Significance of the Trained Nurse in the Tuberculosis Campaign," *Report of Congress on Tuberculosis*, III, 632-38.

est nurse—as she was one of the most far-sighted of philanthropists, sanitarians, and social economists of any age—it might be well to consider her conception of “Nursing.”

The very elements of what constitutes good nursing are as little understood for the well as for the sick. The same laws of health or of nursing, for they are in reality the same, obtain among the well as among the sick. The breaking of them produces only less violent consequences among the former than among the latter, and this sometimes, not always.¹

“Health-nursing” she calls it in distinction to “sick-nursing.” She was one of the first to preach the gospel of fresh air. How she pleads for the lives of the babies in the close, fetid tenements where two in every five die before they are five years old!

The life-duration of tender babies (as some Saturn turned analytical chemist says) is the most delicate test of sanitary conditions. And Oh, the crowded national school where so many children’s epidemics have their origin, what a tale an air-test would tell! We should have parents saying rightly “I will not send my children to that school, the air-test stands at ‘Horrid’ ”!

Again she says:

We have tons of printed knowledge on the subject of hygiene and sanitation. The causes of the enormous child-mortality are perfectly well known, but how much of the knowledge has been brought into the homes and households and habits of the people—poor or even rich?

She speaks in fine scorn of the method of “sprinkling lectures over a community in the hope of teaching public health.”

The chief epidemic that reigns this year is “folly.” You must form public opinion. But while public opinion or the voice of the people is somewhat awake to the building and drainage question, it is not at all awake to teaching mothers and girls practical hygiene. . . . Is it better to learn the pianoforte than to learn the laws which subserve the preservation of offspring? Where then is the remedy for this ignorance?

Everywhere it is the same solution. Education—the people must be taught, not in the lecture-hall but in the home. There must be a corps of nurses in every city and country district—“missioners of health,” she calls them. In answer to the contention that the visiting method is slow, she says:

What is slow in more senses than one is the eternal lecturing, words that go in one ear and out the other, *the only word that sticks is the word that follows*

¹ Florence Nightingale, *Nursing, What It Is and What It Is Not*.

work. The work that pays is the work of the skilful hand, directed by the cool head, and improved by the loving heart. . . . The point is, not "are the people interested in the lectures," but did they practice the lecture in their homes afterwards? . . . We have medical officers, immense sanitary works; we have not nurses—missioners of health-at-home.¹

Most of this was written between 1860 and 1870 and the same points were repeated again and again in her voluminous writings. She was one of the first to advocate prevention, and it was due to her that many wide-reaching sanitary reforms were established in military camps, in cities, in rural districts, not only in England but in India and everywhere. And it was women, trained women always, that she appealed to, to take up this tremendous teaching-task, nurses or sanitary inspectors of the highest character, of education and culture to meet a need "as old as the world, as large as the world and as pressing as life and death."

THE FUTURE DEVELOPMENTS IN SCHOOL-NURSING

But to return to the school nurse. The tendency at present seems to be toward a multiplication rather than a reduction of her functions. Some advise a rigid restriction of her duties to routine inspection of the most superficial sort, which means that she is to detect vermin and dirt and other extremely obvious and unpleasant things, but must carefully avoid any meddling with physical defects, and must on no account presume to exclude on her own authority a case of infectious disease. On the other hand, the hard-pressed medical inspectors are themselves asking that she should not only examine the eyes, throats, etc., of the children daily or at least weekly, but that she should assist also in making measurements, testing vision and hearing, and should in every way help the physician to do his work economically and efficiently. Dr. Cabot, of Boston, has pointed out that the training in observation which the nurse has, and her experience in the schools, enable her to discover even more quickly than the young doctor the first symptoms of the infectious disease. He states:

For ten years in Boston schools the average number of cases of scarlet fever found each year under inspection of teachers and doctors was 14. In 1908 under inspection of school nurses, 1,000 cases were found. That means that the nurses were nearly seventy times as good as the teachers in making

¹ Nutting and Dock, *History of Nursing*, II, chap. v.

the diagnosis of scarlet fever under so-called medical inspection (really teachers' inspection). The average number found each year was 86 cases of measles. The school nurses in 1908 found 2,285 cases, or about thirty times as many.¹

It is obvious that, for many years to come, the number of children under the care of one school doctor will be much too large for any careful and systematic inspection. With the co-operation of an adequate nursing staff, the work could be divided so that the physician's time could be saved for actual examination and diagnosis. I need not say that the salaries offered in most of our American systems, do not induce the best type of medical man to go in for medical inspection, or to stay at it till they become proficient. A few trained experts with a good staff of nurses will do much better work than a large staff of young, untrained physicians.

Hogarth points to the extension of the school nurse's duties in several different ways—the possibility of gradually replacing school-attendance officers by school nurses, the need of special work in connection with infants and nursery schools, the systematic treatment of chronic diseases in regularly organized and equipped school clinics, and the increasing development of fresh-air and special schools for defective and debilitated children, where a resident nurse would always be needed.

In any case the school nurse is definitely an education officer and not merely a district nurse or health visitor employed by the schools. Her first instinct and duty must be to promote the efficiency of school routine by increasing attendance and improving the health of the children. At the same time her work should be directed toward the education of the children in the principles of cleanliness and of healthy living. She should be interested in the simpler problems of school hygiene and should call the attention of the teachers and children to the necessity of open windows, to the harmfulness of wet clothes and boots and to other similar matters. Incidentally she should take notice of all sickly and ailing children and should endeavor, when necessary, to get medical assistance. Sometimes she may be able to obtain the help of voluntary societies for the purpose of sending a child to the hospital or into the country. By these and similar methods she may hope to train the parents, through their children, to aim at a higher standard of health and comfort in the homes.²

¹ *Ninth Yearbook*, Part I, "Health and Education."

² *Medical Inspection in Schools*, chap. xii, 180-81.

Of course in the question of clinics, there would have to be specialization, for no one nurse could possibly cover all phases of the work even in one large school. Miss Margaret MacMillan, of Bradford, England, who has written and done so much for school children, has recently instituted a school clinic in Bradford, where one nurse treats as many as sixty cases in an afternoon.

There is another field of school hygiene which will inevitably fall to the nurse's province, a type of work in which her hospital experience ought to make her pre-eminently successful. That is the routine sanitary inspection of school buildings. In a report made before an incorporated society of medical officers of health, in November, 1902, Dr. Bruce offers this as one of many recommendations for a system of administrative hygiene in Scottish schools:

As regards ordinary sanitary arrangements, such as cleanliness of the school-rooms, the clothes of the scholars, proper airing and heating of the classrooms, sweetness of the latrines, and general tidiness of the school and its appurtenances, we believe that such matters would be best dealt with by a staff of female inspectors.¹

Of course in Britain there are specially trained women for just such work. Mr. Lawrence Veiller, who has done such remarkable service as head of the Tenement House Commission in New York City, pays the highest tribute to the worth of women sanitary inspectors as compared with the average man inspector in his department, and particularly to those who had the training as nurses. If hospital ideals of cleanliness and disinfection could be applied to public-school buildings, there would be a marked improvement in the health of the children and teachers from this cause alone.

The question of authority might be a difficult one here—whether such an inspector would have power to enforce her demands, and who should back her up, the board of education, the board of health, the school physician, or the school principal. Under one expert health authority in a large system, there would be little difficulty, but in a small system her duties and powers would have to be plainly defined.

The value of home visiting has already been sufficiently emphasized. It would seem that this work ought to be extended to include a more or less regular visiting of the homes of all the children. In many instances

¹ MacKenzie and Matthews, *Medical Inspection of School Children*, 123.

it is only the children who are fortunate enough to be "cases" who receive any special attention at all. Probably the greatest number of the homes present the same needs as do these that are visited, but conditions never come to light, and parents and child and school and community are all the losers. The nurse could be that much-needed link between the home and the school, interpreting the ideals and purposes of the school to the home, and discovering the limitations and adverse conditions which surround the children there—conditions which so vitally affect the best efforts of the school. As a nurse she finds out quite incidentally many facts that a social investigator would find it hard to secure. The experience of school nurses and of district nurses is that the mothers welcome the opportunity of talking over many troublesome problems that would never be discussed with the ordinary visitor. This is simply because of the nurse's training and experience, and it is as noticeable in the homes of the well-to-do as among the poorer people.

There is moreover a well-organized popular sentiment in favor of the visiting nurse which gives her special advantage as a social visitor. Even without the bonnet and cloak which has become so familiar and safe a badge in the lowest slums of the older cities, the "lady with the bag" is not only tolerated but welcome in the homes of the most ignorant and degraded. The visiting nurse has won her way, not without difficulty even here in America; but wherever her work is known, her position is assured. Even the new-come foreigners, at first so suspicious, early learn to know and trust her. Hers is a service that they can understand; she makes them comfortable; she eases their pain; she sees that their urgent needs are supplied. The school nurse builds on the work which these early nursing pioneers have done, and inherits the good graces and the confidence of the people. It would take a long time for any new type of social visitor to win such a place.

In regard to the teaching of hygiene, there will always be a difference of opinion as to how the subject is to be taught, and who is to do the teaching. It matters very little which type of specialist is engaged to do the work, for after all success depends on the individuality of the teacher and on his or her enthusiasm, rather than on special academic preparation. Responsibility will be divided according to the number of special teachers and officials available and their relative qualifications, and according to local needs; sometimes it will be the regular grade

teacher, sometimes a biology or physical-education or domestic-science teacher, sometimes a doctor or nurse.

I have attempted to show that the strength of the nurse's teaching lies in the practical application of simple principles to everyday concrete situations. This is not such a new type of teaching as it was in the time of which Florence Nightingale wrote, or the earlier days of school nursing. Honnor Morten speaks of the teaching in the London schools:

The poor children are being "told" things all day long. The nurse showed them, and because she was not regarded as a teacher, was the best instructor in the most important and most neglected branch of education.

The matter of sex-hygiene is difficult because there are so many factors to be considered in any proposal for the teaching of the subject in the schools. It is apparent however that the nurse more than any other social worker, except perhaps the doctor, sees the dreadful havoc that ignorance makes in human lives. That whole dark seamy side of life which is laid bare in the hospital wards cannot fail to impress any thoughtful person with the necessity of full and adequate knowledge for the self-protection of all young people, and especially of girls. Whether such knowledge can be given in the form of class instruction or not, it would seem that a wise and tactful nurse who is associating freely with the children could give much personal advice and assistance to the older girls in the school, at the same time supervising their health and watching over their development.

Experiences in girls' clubs in the settlements has shown that they do appreciate such instruction and often ask for it. They consult a nurse more readily because they know that this is such an everyday subject with her. Any teacher who can discuss such questions naturally and without self-consciousness helps the girls to take a sane and healthier view of the subject, and if the doctor or the nurse can do this without introducing the pathological element unduly, much good should result.

But whatever may be the difficulties here, there can be no doubt that every pupil ought to have some instruction on the subject of home nursing and first aid in emergencies. Some little work of this kind is being done in connection with some courses in domestic science, but, especially in the eighth grade and in the high school, it deserves

a much larger place in the girl's training. The subject should be taught by a well-qualified trained nurse, and should consist largely of demonstrations and practical work. It is an excellent medium for driving in the vital facts of hygiene and sanitation and developing the finer instincts of growing girls. The care and feeding of children comes in incidentally with such a course, and the "little mothers'" classes show with what a splendid enthusiasm and practical skill the girls apply the principles taught. The same kind of work is being done with excellent results in "grown-up" mothers' clubs and evening classes for young women.

With such an accumulation of needed duties, it would require the service of one nurse for each of our large schools, and this will probably be the ultimate solution of some of these vexed problems. Miss Margaret MacMillan, in a recent address under the auspices of the Public Education Association of New York, gave as her opinion that, as soon as the urgent need for treatment and nursing care diminishes as it must do in the schools, the nurse will be employed more and more in these other fields, but so far the number of nurses is so inadequate that their services should be available for those duties which seem most pressing.

ORGANIZATION AND ADMINISTRATION OF SCHOOL NURSING

We come now to the question of organization and administration. As has been noted, the work exists under a variety of managements—private charity, visiting nurses' societies, boards of health, and boards of education. There seem to be special advantages and disadvantages about each form of organization. Where the work is under the visiting nurses' societies, the school nurses are appointed from the regular staff, and have usually the advantage of a wide social experience. They know the city and the homes, are acquainted with all the charitable organizations, the courts, and the boards of health, etc. In this way a much closer co-operation with other social forces is possible. The board of education has no responsibility for details of organization and simply pays the salaries of the nurses. In Cleveland where the work is under the Visiting Nurses' Society, the nurses are employed as teachers and have been placed on the teachers' schedule, the amount received being based on experience and efficiency. Such a plan has worked very well in that city and in many others and is to be recommended for all smaller cities where there is an efficient district-nursing organization.

One great advantage of this arrangement is that the appointment of the school nurse is made by a nursing body which not only investigates her credentials but tries out the applicant in the field of district nursing. Many of those who apply depend on political pull to get in. They may have no aptitude for the work, not even a proper hospital training, and frankly desire to get into school work because of the short hours and easier duties. Rural-school nursing could be started in the same way as in Great Britain, but unfortunately rural district nursing is not at all well developed in America.

As to whether the board of health or the board of education should be in control of the situation in the larger cities, there seems to be no uniformity of opinion. As far as the nursing in its present scope is concerned, there is probably little difference. Should the nurse's duties be extended, however, and especially should she be engaged for any teaching duties, it would seem more fitting that she should be in closer touch with the educational organization.

Dr. Osler says:

The ideal conditions are easily defined. First, a central department at the Board of Education which would supervise and co-ordinate work throughout the country; secondly, at each school an intelligent woman, preferably one who has had experience as a nurse, whose duty it would be to carry out anthropometric observations at stated intervals, to assist the doctor in all matters relating to the hygiene of the school and the personal hygiene of the children; thirdly, a school dentist who would make an inspection of the mouths of the children and put their teeth in order; and lastly, the school doctor.¹

When a regular instructor in physical education is employed, measurement, weights, etc., are usually under that department. It is important that there should be the greatest harmony and co-operation between these different specialists; this can be more readily effected where all health functions are under one expert head.

In his recommendation of machinery for health supervision and instruction in the schools of the city, Dr. Allen advises, among other features, "a staff of nurses to assist medical examiners to give practical demonstrations in cleanliness, to teach mothers the care of children, both at their homes and in mothers' meetings, to enlist the co-operation

¹ "Medical and Hygienic Inspection of Schools," *Report of Second International Congress of School Hygiene*, 468.

of family physicians and neighborhood facilities such as hospitals, dispensaries and relief agents, magistrates, courts, and probation officers, all to be under the board of education or the board of health."¹ For the county he would have "a physician and nurse to organize inspection and instruction for rural schools, to give lessons and make demonstrations at county institutes, to show teachers how to interest physicians, dentists, health officers, and parents in the physical welfare of school children." The hygiene of school buildings would also be under their inspection.

In regard to the relative number of doctors and nurses required, there is the greatest difference of opinion. Much depends on the amount of time which the school doctor devotes to his work. Often there are nurses but no regular physicians employed, and here of course the more pronounced cases are referred to home physicians or dispensaries for diagnosis and treatment. Sometimes the school is inspected daily, sometimes weekly or even monthly. The nurse may have 1,000 children under her care or she may have 10,000. Dr. Newmayer says one nurse is capable of attending to five schools with 5,000 children, visiting three in the morning and two in the afternoon, and doing the home visiting after school. Usually when she visits the school every day, she has time to treat only the chronic cases and those which the teacher and doctor send to her, leaving the routine inspection in the classroom to be done as she can find time. In London one nurse might have from 24 to 48 schools to inspect.

Only in the event of gross neglect or ignorance on the part of the parents are the nurses required to follow the children to their homes and to advise the parents. Their original powers for the exclusion of verminous children were severely restricted. If after repeated visits the children are still unfit to associate with others, the case is taken up with the divisional superintendent who summons the parents to the police court to explain why the children are not in school. The magistrate usually imposes a fine which is heavier for a second offense.²

Of the routine inspection Dr. Hayward says:

Often as many as 200 or 250 children pass before the nurse at one time. She detains them merely long enough to glance at their head, skin, eyes, nose, and general appearance, and then if nothing seems wrong, she passes them on.

¹ *Civics and Health*, 292-94.

² Helen L. Pearce, "The Place of the School Nurse," *British Journal of Nursing* (August 17, 1907).

In these superficial examinations, the trained school nurse becomes an expert in the detection of evidences of skin and eye diseases, adenoids, enlarged tonsils, suspected tuberculosis, and the first signs of various children's diseases. She is the sieve through which the children pass before being brought directly to the physician, and it is a matter of great importance that her training be thorough and her observation acute.

The work is carried on in the school station where all necessary surgical supplies and utensils are kept, and the nurse gives the children practical instruction in bandaging, dressings, and in various points of cleanliness and personal hygiene.

In Philadelphia the physician and nurse visit each school daily at a stated time. A room is set apart in each school for their use; the pupils are sent down to the office by the teachers and are individually examined. A card system is used and for each child a card is sent to the principal. Records are kept showing the date of treatment, care, etc. When the pupil needs treatment and no physician is in attendance at home, a paper is signed by the parent asking the doctor and nurse to take care of the case. For pediculosis, cards with printed directions for treatment are sent to the homes. Every day the nurse goes through one or more classrooms, observing the condition of each child. This is done with no interruption of classroom work. No excuse for non-treatment is accepted. If the parents are too poor to provide the necessary glasses, and the nurse has ample proof of such a condition, she devises some method of obtaining the glasses. In every case, however, the parents are asked to pay a small sum toward the expense and, by giving a trifle each week, this can usually be done. The idea is to make the parents feel their responsibility for the child's health and not to encourage pauperization. It has been observed that the effect of home visiting is to awaken interest and to develop the feeling of responsibility in the parents, rather than to make them more dependent on outside agencies.

In New York each nurse has from two to seven schools with an average of 4,000 children. She visits the schools in the morning usually, for routine treatments and special cases. As little interruption as possible of the regular school work is incurred. At a given signal, children whose names have previously been sent to the teachers go to the medical room to see the inspector. At another signal those who are to go to see the nurse are excused. When school closes at 3:00 P.M., the

nurse makes the home visits, ten being considered the average number for each day. One visit does not always bring results; sometimes as many as five visits have to be made before parents realize the importance of medical care.

The routine inspection consists of a class to class examination which is done systematically and regularly. The children pass before the nurse, pulling down their eyelids as they pass, the condition of the hands being noted at the same time; the throat and hair are also examined. In New York at present there is no time to do this oftener than about once a month. Miss Rogers says:

The number of children which one nurse can properly examine each week and take care of is about three thousand. Where conditions are bad, the routine examination should be made every week; in other localities every second week is sufficient.

The doctor and the nurse do not always visit the school at the same time. A code is used to denote the principle affections from which the children suffer. If there are any cases for treatment, the doctor leaves a card for each child indicating the trouble by the code number. In the same way the nurse leaves cards showing the cases which ought to be referred to the physician. The treatment in each of these type cases is very much the same. When children are to be treated at home, simple and explicit directions are given on the card.

The question of securing adequate attention for the poor child is still one of the unsolved problems. In Cincinnati they have special dispensaries for school children, and abroad this is being carried out more fully than in America. In New York the regular dispensaries in the congested districts cannot treat all the children who are brought by the nurses. Miss Rogers hopes to see school dispensaries established, where the children can be sent directly from school.

The hours should be arranged so that there will be no loss of school time for the children and where our own physicians and nurses will be in attendance. Every one then connected with the work should have the same interest and the responsibility could not be shifted from one division to another.¹

A great many of the blank forms used in the various systems of medical inspection will be found in *Medical Inspection of Schools*, by

¹ Lina L. Rogers, "Some Phases of School Nursing," *American Journal of Nursing* (September, 1908); also *ibid.* (January, 1907).

Gulick and Ayres, and in Dr. Newmayer's *System Employed by the Trained Nurses in the Schools of Philadelphia*.

The following outfit is provided for the medical room in each of the New York schools. I may say, however, that the equipment is often of the crudest kind and quite inadequate in view of modern clinical requirements:

1 screen	Boracic acid powder
1 cabinet	Tr. green soap
2 chairs (1 high)	Collodion
1 table	Vaseline
1 scrap basket	White precipitate ointment
12 towels	2 basins (white granite)
Absorbent cotton	1 glass jar (1 gallon)
Absorbent gauze	1 ointment jar (glass)
Bandages	Bichloride mercury tablets

I quote further from Miss Rogers:

The supervising nurse has entire charge of the school nurses and is responsible for the efficiency and character of the work performed by each nurse in all boroughs of the city. It is her duty to make arrangements for beginning work in the schools and to see that the necessary supplies are provided by the department of education. She also regulates the proper amount of work for each nurse, making whatever changes and transfers are necessary, and inspects the work of each.

The supervising nurse receives all the reports, which she examines and corrects. These are sent in, one every day, one every ten days, and one every month. The supervisor makes a general summary which is forwarded to the chief inspector. The nurses report to her at a weekly meeting. In New York the nurses must pass the civil-service examination and new appointees are selected from the list. There has been much difficulty in keeping the service free from undesirable applicants, but standards are being gradually raised. The number of hours' work given by the nurse vary also, the extremes being from 8:00 A.M. to 5:00 P.M. in one city, and from 9:00 A.M. to 3:30 P.M. in another. The nurses in New York work half-days on Saturday, and during summer when they are working with the babies they take turns on Sundays for emergency calls. The home visits nearly always require longer than the stated time, and nurses find themselves often as late as 7:00 P.M. before they are through. The records have to be made up at night, and this adds to the work considerably. The average

salary is \$75 per month, though it ranges all the way from \$50 to \$100 per month. Supervisors get from \$900 to \$1,200 per year.

Dr. Frederick Rose at the International Congress of Nurses held in London in July, 1909,¹ dealt with the significance of the movement:

Great developments may be expected within the next ten years from the institution of school medical inspection. It will soon include school medical treatment in hospitals or school clinics. This again must lead to some form of general medical inspection before school age; and generally speaking, the question of the home conditions of school children, which lies at the root of the whole matter, will receive more detailed and effective consideration. The whole development of school hygiene is pointing in the direction of a ministry of Public Health, the municipalization of the health services of the nation. In a few years, on the basis of one doctor and two nurses to every 2,000 children, about 4,000 doctors and 8,000 nurses may be necessary. It is therefore obvious that the occupation of the school nurse is one of the coming professions for women. It is a reasonable, interesting, and important profession, with a fixed salary, a recognized status, regular work, and a suitable amount of leisure.

Women entering this profession of school nurses will be privileged to take part in one of the most far-reaching and important developments of modern times. It is beyond reasonable doubt that the coming of school hygiene will gradually effect a complete change in our views on education. . . . The development of school nursing will assist medical science in the accomplishment of its three great stages of progress—the abandonment of the first or primitive stage, that of the mere detection and cure of disease—the second stage, that of the prevention of disease—and the final and greatest stage, the raising of the standard of vitality of the whole human race.

THE PREPARATION OF THE SCHOOL NURSE

It is evident that this work is here to stay and it is probable that it will be extended into wider and wider fields. While not strictly nursing in the accepted sense, it requires the knowledge, the skill, and the training which is at present given nowhere except in the nursing schools. It is essential that this training should be broad, sound, and thorough. The school nurse should be a graduate of a recognized general training school, which includes special work with children, a good experience in eye, ear, nose, and throat work, and in infectious and skin diseases. She should also have a thorough training in everything that relates to nutrition and general hygiene.

¹ *British Journal of Nursing* (November 20, 1909).

There can be no question about the high personal qualifications which she should bring to her work. Such a vocation demands educated women, women who not only know how to do things but why they do them; women of broad sympathies and social understanding as well as practical skill. This enlarging field of nursing activities makes a new and direct call on the hospital training schools to uphold high standards of entrance requirements and to furnish a type of professional training which will fit the student not only for private and hospital service, but for the social and educational field as well.

But while the nursing school is responsible for her strictly professional education, much of the training of the school nurse must inevitably come after graduation. If she is to be an expert in her field, she must specialize on the subject of children, on their physical and mental constitution, on child hygiene and child psychology, on children's diseases, the history of infant mortality, the social movements which involve child welfare, etc. She should also be in touch with the educational problem, so that she can co-operate sympathetically with the work and the ideals of the school. From the standpoint of sanitation and public health, she should know something of the housing problem, of municipal as well as domestic sanitation, and of such laws and local regulations relating to them as will enable her to lay hold promptly on all the agencies of relief.

Sufficient mention has been made of the social functions of the school nurse and of the many ways in which she can be of service in the home and in the community. To do this effectively she must know the social agencies at work in her city, what they stand for, and how she can co-operate with them. She should also be in touch with the broader social and industrial movements, and should have, if possible, some fundamental knowledge of sociological and economic principles. In addition, she must know how to make her knowledge available to others. Her teaching must be simple, direct, concrete, and forceful, if it is to reach the children and the people with whom she deals. This requires some knowledge of the teaching art.

It might readily be urged that such a preparation as is here outlined would take years to acquire. Eventually some special training will probably be required by those employing school nurses. In the meantime the wide-awake nurses are doing what they can through reading and lectures and special courses, such as are given by the schools of

civics and philanthropy, the better to fit themselves for their work. The practical experience gained in district nursing cannot be overestimated and, as has been pointed out, the administration of school nursing under some such nursing organization would tend to secure a type of woman better trained and usually more devoted to social service. Much can be done undoubtedly through conferences of school physicians and school nurses, and general meetings with teachers and supervisors in physical education, domestic science, etc. Discussion on the main phases of this work must find a place in educational, medical, and nursing conferences, and will inevitably bring about a clearer understanding and more active co-operation between the rank and file of these professions.

The great demand, both on the part of the public and of nurses themselves for fuller preparation in all these branches of nursing, has been felt for some time. The need now is for an institution or organization that will give the preparation required. The various teachers' colleges, in association with hospitals and hospital-training schools for nurses, are the means at hand. The one significant attempt to meet this problem is that undertaken by Teachers College at Columbia University. Through the generosity of Mrs. Helen Hartly Jenkins this institution presents a one-year course under the control of the Department of Nursing and Health. It provides an experiment and experience upon which further organization of training schools for school nurses may well be based. Its distinct aim is to prepare "teacher nurses" for district nursing, school nursing, board of health work, etc. Its scope is much as outlined above, combining the social, economic, educational, sanitary, and nursing phases of the work. A high-school certificate, or its equivalent, and a diploma from a recognized training school for nurses are required for entrance. Through affiliation with the New York School of Philanthropy and the Henry Street Nurses' Settlement, the students have unusual opportunities for combining theoretical and practical work in a very broad field. They will also have the advantage of observing closely the methods employed in the school-nursing and public-health work of New York City. A group of students is already at work specializing in various fields. It is hoped that this type of course will prove serviceable in helping to solve the problem of the special preparation of the school nurse.

THE PROFESSIONAL TRAINING OF CHILDREN'S NURSES

MARY L. READ

We are familiar with the redundant statements and appeals of Pestalozzi, Froebel, and Spencer regarding the education of parents in the care and training of children, and the oft-quoted comments of English and American pediatricians of high authority on the ignorance of mothers as among the chief causes of infant mortality. On the programs of such conferences as the International Mothers' Congress and the International Congress for Home Education there frequently appear addresses and discussions on such topics as "The Training of Nursery Maids," "A National School for Women," "Supplementary Education for Girls to Fit Them as Wives and Mothers." Yet it is perfectly patent that such education, briefly and practically presented, in the fundamentals of child care and training is rarely provided.

The phase of this problem with which the present report is concerned is the professional training of women for paid service as intelligent and trained care-takers of little children, either in private homes or in institutions. It presents the results of a superficial survey of the present situation, including the demand for such a service; its opportunities and recompense; the provisions for training; the meeting of practical details of curriculum, practice, length of training, social relations of employer and employee; and suggestions for future developments.

In European countries.—Among the first pioneers in providing practical, comprehensive training in the physical care and early development of infants and little children is the Pestalozzi-Froebel Haus in Berlin, where since 1874, under the guidance of Froebel's gifted niece, Henrietta Schrader-Breymann, a "mother school" and kindergarten of truly Froebelian simplicity has been maintained. A direct offshoot of this is the Sesame House in London.

About 1902 at Ghent, Belgium, a School for Mothers was started under the enthusiastic direction of Dr. Miele, in connection with the Bureau de Bienfaisance. This is part of the comprehensive system of infant hospitals, crèches, milk depots, and dispensaries. It includes

health talks to mothers (such as are now given at many of our own milk stations and infants' clinics in the large cities), and training courses for girls as infants' nurses, with practice in the crèches.

In Paris the Ecole d'hygiène d'éducation familiale et sociale d'enseignement ménager, which was founded by Mme Augusta Moll-Weiss at Bordeaux in 1897, removing to Paris in 1904, provides a most comprehensive course. One section is for professors and women of the higher classes; a second section for women intending to enter household service as nurses, cooks, etc.; a third section for women of the working classes, and a fourth for instruction in domestic economy and home management.

England appears to have developed more centers for the training of women as professional children's nurses than has any other country.

The list includes Norland Institute, the Liverpool Ladies' Sanitary Association at Liverpool, the Princess Christian Institute at Manchester, the Cheltenham Guild of the Dames of the Household, Sesame House, St. Christopher's at Tunbridge Wells, and St. Mary's Nursery College, London.

The reports and prospectuses of these institutions uniformly state that the demand for their graduates far exceeds the supply. The salary ranges from £24 per year for recent graduates to £50 for the more experienced. Most of the students are in residence. The training school is also usually a resident nursery where children from infancy to six months are received and their care is paid for by parents or guardians. Every effort is made to maintain a home atmosphere. In general, the course includes both theory and practice in hygiene, nursery cooking and laundry, home nursing, children's sewing, nursery management, kindergarten principles and practice. The length of the course varies from three months to one year. There is no salary during such training, but a fee is charged to cover tuition and living, averaging from £3½ to about £6 per month, according to the particular school. "Lady nurses for children," "children's nurses," "nursery nurses," "nursery governesses" are different terms there used for the same profession. All of these schools recognize both the physical and the spiritual nature of the child, and the need of training for the care of the child's physical, mental, and moral development.

In the United States.—The training in this country has been chiefly for "infants' nurses," and "nursery maids," and the training has been

done almost wholly by babies' hospitals. The Babies' Hospital of New York City has maintained such a course for about twenty years. The course includes six months in the hospital, with instruction in infant hygiene, care and feeding, the rudiments of kindergarten work, and ward duty in the care of sick and convalescent children; two months are then spent on probation in private families before a certificate is granted. Nurses receive \$7 a month during training, and \$25 per month after graduation during the first year, usually rising to \$30 per month thereafter. About thirty-five such nurses are trained annually, and the demand is often for one thousand in the same period. The requirements for admission are good health, good references, and ability to read. Married women and widows are not received. Most of the girls are from twenty to twenty-five years of age. The applications for admission are so numerous that girls frequently have to wait six months after acceptance before they can enter. These girls seldom have more than a common-school education. In the families of employers they are ranked as domestic servants, called by their first names, and have their meals in the kitchen with the other servants; they usually sleep either in the children's or the cook's room. Dr. Holt has expressed the opinion that young women of better education and personality will not enter training courses for nursery maids, because of this social relation to the family.

Similar training schools are reported to be conducted at the following institutions: St. Christopher's Hospital, Brooklyn; Nursery and Child's Hospital, New York City; The Babies' Hospital, Newark, N.J.; St. Margaret's Home, Albany; Infants' Hospital, Boston; The Pittsburgh Home for Babies, Pittsburgh, Pa.

A course for nursery maids that was started in connection with the kindergarten training school at Pratt Institute some years ago was abandoned because the young women who entered, if they were of desirable intelligence and personality, usually concluded by taking the entire kindergarten's course.

A course for "kindergarten nurses" was started by the Y.W.C.A. of Harlem, New York City, in 1906, but was later abandoned—for what reason it has been impossible to learn.

An attempt was made some years ago to train nursery maids in connection with the day nursery of Neighborhood House, Buffalo, but this also was abandoned for some unknown reason.

The writer has been unable to learn of any training course in this country similar to that offered by the English schools.

REPORT OF A PRELIMINARY STUDY ON THE NURSEMAID PROBLEM
CONDUCTED IN NEW YORK CITY, 1910

The study took up the problem of the nursemaid from the standpoint of: (1) the employer; (2) the employee; (3) the employment agency; (4) the nursemaid training school; (5) the observer of nursemaids in parks and boulevards. Questionnaire blanks were arranged for employer, employee, and observer. Interviews were held with managers of employment agencies, directors of training courses, applicants for nursemaid positions. Advertisements were inserted in the Sunday papers both for employment and for nursemaids; postcards were sent to persons advertising for nursemaid positions; advertisements for nursemaid and for mother's helper were inserted in the *Outlook*. The returns from these questionnaires, interviews, and advertisements are too few to draw final conclusions, but they at least give an insight into the situation.

Only twelve replies were received from employers. Seven of these found no difficulty in securing the kind of nursemaid they found satisfactory; five others did. Only one employer paid less than \$20 monthly, some as high as \$40. With one exception, the nursemaid was treated as a servant, was called by her first name, had her meals in the kitchen with the other servants, usually was on duty from 7 A.M. to 7 P.M. with a half-day off on alternate Sundays and Thursdays. The qualifications specified as necessary (given in the order of their frequency in replies) were cleanliness, neatness, honesty, politeness, faithfulness in duties, fondness for children.

The applicants interviewed at employment agencies were all girls of very limited intelligence and training, and at several agencies the investigator waited all the morning without a single applicant for such a position appearing. The girls interviewed wanted \$18 to \$30 monthly, and were willing to assist in household work, but objected to wearing a uniform. Some of the employment agencies when questioned directly said they had difficulty in finding suitable nursemaids; others reported no difficulty in supplying the demand, but stated that the training consisted only of experience in previous households. The employment department of the Charity Organization Society reported a great demand

for young girls to "mind the baby," at \$12 to \$15 a month. The employment department of the Young Women's Christian Association reported that they did not register nursemaids "nor other domestic servants," but that they had calls for nursery governesses and for mothers' helpers. The "nursery governess" is understood by them to be a young woman of superior breeding whose influence on the children is refining; she sometimes has also the physical care of the children, but in some families this is done by the mother or by a nursemaid. The greatest demand is for the English trained nursery governesses, and after that for Hanoverian or French. The "mother's helper" they defined as intermediate in social rank and responsibilities between the nursemaid and the nursery governess.

Postcards were sent for about two weeks to all applicants for nursemaid positions advertising in the chief city dailies, but only one in five came for an interview, and these were chiefly the uneducated, untrained type. The responses to advertisements inserted in the daily papers were equally unsatisfactory. Two advertisements were inserted in the same issue of the *Outlook*, one for a nursemaid, the other for a mother's helper. One reply was received for the former, and twenty for the latter. These twenty deserve analysis. One was English, the others American, chiefly from the eastern states. Three were trained hospital nurses, four were college women, and seven more had a high-school education, one was a teacher, four were nursery governesses, two were nurses, and twelve others reported experience in the care of children. Many specified willingness to help with sewing or light household duties. The wages requested were from \$20 to \$30 monthly.

Only twelve questionnaire blanks were returned from observations of nurses; six of these reported no adverse criticisms, one reported unseemly conduct, three ill-treatment, and two neglect. The blank was so prepared that any adverse criticism had to be based upon an actual concrete case, with particulars, on the date the observation was made.

The directors of two of the training schools for nursery maids (connected with hospitals) were interviewed. They both stated that the demand for their graduates exceeded the supply, and that the applications for admission were far in excess of their facilities for training. Their students are chiefly young girls of only common-school education. One of the physicians longest connected with such training expresses the opinion that it can be conducted equally well in co-operation with day

nurseries and kindergartens; but that because of the social status of the nursemaid in the family it would be difficult to find young women of the desired education and personality to take the training.

A study of some fifty day nurseries in one of our largest cities reveals that much less than half of the care-takers, infants' nurses, or matrons are trained for the physical or mental care of the child. Inspection of the curriculum of kindergarten training schools indicates that few of them give instruction in the physical nature and care of the child. A report based on a study of forty normal schools, presented at the conference of the Association for the Study and Prevention of Infant Mortality at Baltimore last November, states that hygiene is very impractically and inadequately taught in most of these schools.

The questions which this study raises are these:

1. Should not all training schools for teachers include due recognition of the child's physical life and its development and care?

2. Is it not possible by co-operation between normal schools or kindergartens and day nurseries or foundling homes to give such a practical training, and that in the course of a few months?

3. What agencies should take the initiative in this country in providing such a course for mother's helpers and nursery governesses as is now provided by the training schools for children's nurses in England?

4. Is it not possible by such a course to train great numbers of young women who would live at home and give only day service to one or more families, thus helping to solve both the question of social status and of nurse hire for the family of moderate means?

Following is a more detailed description of these English schools for which data is at hand.

At Norland Institute the training lasts for one year, the fees amounting to £74 8s., which includes living, laundry, tuition, and the first uniform. The first twelve weeks are spent at Norland Institute (which is also a resident nursery). Here thorough instruction is given in cookery, laundry work, housewifery, hygiene, nursery management, the making of simple garments. The student then serves a term in one of the children's hospitals, after which she returns to the Institute and receives a course of instruction in the Froebelian methods of teaching and becomes first an under nurse and afterwards charge nurse in the Norland Nurseries. This Institute was started in 1894 and about one thousand nurses have received the training.

The Liverpool Ladies' Sanitary Association began with non-residential training, but in 1908 opened its Residential Training Home for Lady Nurses for Children. Educated ladies receive here a six months' training as children's nurses. Quoting from the announcement:

The demand for fully trained, competent, well-educated women as Lady Nurses for children is at present much in excess of the supply, and it is hoped that in the future the profession will be adopted by an increasingly large number of those who have a real love for children.

If, as we all must admit, true education begins in the nursery, the value of the well-trained nurse cannot be over estimated. The L.L.S.A. have recognized this in drawing up their syllabus, and the training given is calculated to impress upon the nurse that the mental, moral, and spiritual characteristics of the child must all receive their due share of consideration, and that the nurture of the young includes alike the care of the mind and the body.

Special lecture courses by selected instructors are given on nursery management, hygiene, feeding of infants, and kindergarten; and special instruction is given in needlework, elementary cooking, and laundry work. Practical experience in the care of infants and young children is given in the L.L.S.A Day Nursery.

The tuition fee for non-resident students is £20; for residents £30, including board but not laundry. Candidates come for a month's probation; if not considered suitable for the training, they may be asked to withdraw without explanation. Those completing the course are expected to wear the uniform—a dark green bonnet and coat. On the completion of two years' satisfactory service, a second certificate and the badge of the Association are given.

The Princess Christian College at Manchester was started in 1904 "for training ladies as children's nurses," under the management of the Gentlewomen's Employment Association (and later incorporated as a separate company) under the patronage of Princess Christian.

The college was established "to meet the increasing demand for ladies as children's nurses, and to provide the necessary training for a career which is so eminently suited for educated women who have a natural sympathy with young children."

A resident nursery is maintained for children of the better class only, the minimum period for their residence being three months, and the maximum age six years. Here, as in the other similar training schools, the nursery department is the vital feature of the training. The sub-

jects taught include general rules of health, first aid and home nursing, infant feeding, nursery management, domestic work, nursery laundry work and cookery, needlework, kindergarten games, drilling, etc.

Candidates are not admitted under twenty years of age, and must be resident in the college. Students are on probation the first fortnight, but may be required to withdraw at any time if found unsuitable for the work. The work is in charge of a principal, and under her are the two resident teachers—one for domestic science, laundry, cookery, and the other for needlework and housewifery—a hospital trained nurse in charge of the nurseries, and three outside lecturers—one for kindergarten, one for physiology, first aid, etc., and one for child-study.

In the *Fourth Annual Report* (1908) of the college are printed the rules for employers and for employees, covering such items as salaries, duties, holidays, testimonials, social relations, etc. Nurses are entitled to four weeks' annual holiday; are not to scrub grates or floors, nor carry coal, though they will dust rooms and make beds; are not to take their meals with the house servants (nursery maid excepted), nor in their bedrooms; are to be addressed as Miss ———; are obliged to wear the college uniform when on duty. A month's notice is required before the termination of an engagement. During the first two years after graduation the college finds the posts for the nurses, and collects their salary for them in quarterly instalments; thereafter they find their own posts and arrange and collect their own salaries.

The training consists of two terms of fifteen weeks each, the fee for tuition, living, and laundry being sixty guineas.

The Sesame House, 43A Acacia Road, London, a training college planned on the lines of the Pestalozzi-Froebel Haus, Berlin, was opened in 1899 under the auspices of the Sesame Club. As stated in the first yearbook, the general purpose is to fit girls and women more fully for the woman's life, and the second purpose is to fit girls who need to earn their livelihood, as certified lady-nurses to children, as kindergarten teachers, as nursery governesses, for whom there is a great demand, and for settlement work. Quoting from this same yearbook:

Many girls, unfitted by previous education to compete in the examinations of the day, yet in possession of gifts to be in no wise under-valued, are thus enabled to prepare themselves for a sheltered and refined life, which offers far larger opportunities of out-giving and of general self-development than the mechanical life of a bookkeeper and shorthand writer.

The work, both theoretical and practical, is so arranged as to center around the education and nurture of children and the internal management of a household in all its branches. Both resident and non-resident students are received. There are three terms of thirteen weeks each, the work of each term being guided by the season. Students may enter at the beginning of any term. A certificate is granted to students satisfactorily finishing the year's training.

The mornings are given to practical work in the house, kitchen, or garden, or with the children. This includes a regular course in cookery, house management, cleaning, nursery laundry, needlework (children's garments and mending), vegetable and flower gardening. In the afternoons, classes are given in nature-studies, singing, geometry, art, domestic hygiene, and house sanitation, Froebel occupations, educational history, principles, and methods.

The children of the free kindergarten and the Sesame Nursery House furnish the practice. A fourth term of three months, in the Sesame Nursery House, in the care and feeding of infants is required of students training as lady nurses.

The tuition fee is £10 per term; board and residence is £14 per term, with accommodations for twenty-eight.

St. Mary's Nursery College, in London, was opened in 1908, "to provide for the training of Catholic gentlewomen as nursery nurses." The college "provides an inexpensive training for educated women who have natural sympathy with little children." The training includes:

I. A practical course:

The daily care and feeding of resident infants and children, from a fortnight to five years old

The duties and management of a nursery (all the work being done by the students)

Nursery cooking

Nursery laundry

Needlework (cutting-out and making of children's clothes, knitting, mending)

II. A course of instruction given by qualified teachers on the following subjects:

The religious teaching of young children

Nursery hygiene

Child physiology

First aid

Kindergarten occupations, games, and songs

The principal, Mrs. Bernard Mole (Clapham Maternity Hospital certificate), is assisted by a trained children's nurse, domestic-economy and kindergarten (Froebel Union) teachers, medical and other lecturers. Quoting from the announcement:

If, as is generally admitted, true education begins in the nursery, the value of a well-trained nurse cannot be over-estimated. The training will also be of value to those entering upon the responsibilities of married life and to others who may not intend to adopt nursing as a profession.

Students satisfactorily completing the six months' course are granted a certificate and are entitled to wear the uniform of the College. The fee for six months' training, board, and residence is £36.

At the Cheltenham Crèche a three-months' course is given, to either resident or non-resident students, there being accommodations, however, for only four residents. The fee for three months' residence and training is £10.

The National Froebel Union has recently created a new section designated "The Child Attendant Association" which grants a certificate of practical fitness for the duties of such attendants, after training under conditions which meet with their approval and which are open to their inspection. Their "provisional scheme for training child attendants for infants' and nursery schools" calls for a six-months' training with daily work under supervision in a selected school, such work including reception and inspection of children for symptoms of disease, washing, supervision of lavatories, disinfection of garments when needed, first aid, organization and supervision of lunches. It also requires three twelve-hour series of class lectures and demonstrations on (1) elements of child hygiene and care, (2) characteristics of normal and abnormal children, (3) personal care, first aid. The training is estimated to cost for six months £4 4s. to £6 6s.

Two London kindergartens are now giving such training.

In a notable address before the Religious Education Association in 1907 on the "Relation of the Home to Moral and Religious Education," Commissioner Elmer E. Brown urged the establishment of special training courses for young women of education and personality to care for little children under the school age; and the consequent development of a new profession for women. He calls attention to the intimate relation between the moral education of little children and their physical welfare, especially their habits of eating, sleeping, and related activi-

ties which involve the nervous system. He points out the great range of requirements both of knowledge and judgment—nutrition, the prevention of disease, the treatment of minor ailments, the correction of faults of temper and disposition, the first steps in learning, the supervision of games, the telling of stories, the first hint of the mysteries of religion.

It is accordingly desirable [he adds] that in training for this service we should break away from the narrower traditions of the kindergarten. Many good precedents may be drawn from the training of nurses in hospitals and sanitariums, but even such precedents must be followed with caution. These things seem clear to this extent, at least, that the training should join theory with practice, and that the work must be partly pedagogical and partly parallel to that of the ordinary nurses' training school.

He suggests that the theoretical instruction could probably best be given in connection with a college or university, thus the more readily attracting young women of the desired preliminary training, the students having access to a babies' hospital, foundlings' home, day nursery, or other children's institution.

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THE TENTH YEARBOOK
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OF EDUCATION

PART I
THE CITY SCHOOL AS A COMMUNITY
CENTER

BY
H. C. LEIPZIGER, MRS. S. E. HYRE, R. D. WARDEN, C. W. CRAMPTON
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ELLWOOD P. CUBBERLEY,

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PREFACE

This yearbook is planned to include accounts of actual experiments that have been tried in making the school a community center, so that other communities may learn of the possibilities and difficulties of putting into practice what has already been achieved in some of the more advanced communities. At the National Education Association meeting for 1902 (p. 373 of *Proceedings*) John Dewey discussed very ably the theoretical aspects of the problem as requested, but said:

I do not feel that the philosophical aspect of the matter is the urgent or important one. The pressing thing, the significant thing, is really to make the school a social center; that is, a matter of practice and not of theory. Just what to do in order to make the schoolhouse a center of full and adequate social service, to bring it completely into the current of social life—such are matters I am sure which really deserve the attention of the public and occupy your own minds.

The contributors to this volume have described in a concrete way the extent and character of the work carried on under their direction, giving methods employed, results secured, concrete incidents, difficulties, criticisms, suggestions, and comparison with similar work in other communities.

The secretary desires to express his appreciation of the work of the specialists who have provided the material, and of the large assistance rendered by Mr. Clarence A. Perry, of the Russell Sage Foundation, in organizing the program for the yearbook.

Part II of the *Tenth Yearbook* supplements this volume with a similar discussion of "The Rural School as a Community Center."

I. ADULT EDUCATION AND THE NEW YORK PLAN OF PUBLIC LECTURES¹

HENRY M. LEIPZIGER

Supervisor of Lectures, New York City

AND

CLARENCE A. PERRY

Russell Sage Foundation, New York City

A visitor to one of the evening lecture centers sees first two flaring gas lamps illuminating a bulletin board and a pair of quick-yielding doors, then he passes into a lobby, or perhaps up a flight or two of clean stairs, animate with a procession of babbling people, and enters a sloping, amphitheater-like auditorium or else a level, desk-filled assembly-room where a man is busy with rubber-tubes, copper-tanks, and a machine on a tripod which contains two eyes, one over the other, that look straight at a square white surface stretched wall-like on the platform in front. Or perhaps, instead of this bleached expanse, he sees some tables laden with test-tubes, retorts, and wicked yellow bottles, and near by a young man crushing gritty stuff in a mortar; or maybe a background of charts shining with muscle, nerves, and viscera, setting off an amiable skeleton swinging idly from a mail, and a boy with bandaged leg and head lying supine on a table among "red-cross" lint and aseptic cotton. Or in the place of this hospital and laboratory paraphernalia he may confront an open piano with sheet-music anticipatively placed. But always he finds a hushed audience, devoid of children, awaiting the terse introduction of the speaker of the evening by the official-like personage in charge. These are some of the things witnessed between 7:30 and 8:15 on a winter's evening at the school lecture centers in New York. A moment after the latter hour the doors will be locked and the door-tender beyond the reach of entreaties.²

¹ This paper is composed of excerpts from Mr. Leipziger's official reports supplemented by excerpts from Mr. Perry's *Wider Use of the School Plant*. Mr. Leipziger was prevented at the last moment from preparing a special paper that he had planned for this yearbook, and Mr. Perry kindly provided this material. The footnotes indicate the sources of the excerpts.—EDITOR.

² Perry, *Wider Use of the School Plant*, 200.

PHYSICAL CONDITIONS

There are at present 118 school buildings in use as lecture centers, of which 40 have auditoriums of the newer style, 30 have so-called assembly halls not used for class purposes, 24 have assembly halls consisting of classrooms with sliding doors, and in 24 of the buildings the lectures are given on the playground floor; of these 24, 17 are in Manhattan and 6 in the Bronx.

The playground floors are chosen because so many people dislike climbing up so many steps to the top floor. But these playground floors should not be used at all, as the ceilings are low and the floors are flat, so that those in the rear cannot well see the illustrations thrown upon the screen, and there is constant rising and sitting on the camp chairs; besides which, the halls are difficult to heat and ventilate in winter, and altogether are exceedingly unsightly. They are not proper places for the meeting of citizens who come to learn.

In addition to the 118 public-school buildings that are in use, there are 46 halls, other than public-school buildings, and these halls are engaged because in the locality in which they are situated they afford better facilities than those offered by the school buildings of the vicinity. Some of these are church halls. (Rental is paid for seventeen of these halls, while twenty-nine are given rent free.¹)

CLASSIFICATION OF LECTURES

Lectures have been arranged in groups according to subjects, each group subdivided into smaller groups. In arranging the various programs, closely allied subjects from the several groups are selected in rotation, thus providing in each center a curriculum of lecture studies. In selecting subjects for the lectures, the expressed desire of the people, the known characteristics of the neighborhood, and the previously arranged programs are considered. The groups are:

First Group

LITERATURE, HISTORY, SOCIOLOGY, ART

I—Literature. II—History. III—Social Subjects. IV—Fine Arts.

Second Group

GENERAL AND APPLIED SCIENCE

I—Astronomy. II—Physics. III—Chemistry. IV—Geology. V—Biology. VI—Physiology and Hygiene. VII—Industries.

¹ Leipziger, *Annual Report of the Supervisor of Lectures*, 1909-10 (New York).

Third Group

DESCRIPTIVE GEOGRAPHY

I—North America. II—United States. III—British North America. IV—Central America and the West Indies. V—South America. VI—Europe. VII—Asia. VIII—Africa. IX—Hawaii, the Philippines, Australasia.

Special Group

LECTURES IN FOREIGN LANGUAGES

I—Lectures in Italian. II—Lectures in Yiddish. III—Lectures in German.

It has been possible to adapt the first and second groups to the special purpose of encouraging definite study along special lines in co-operation with college or university, and this method is being extended to all of the groups. Lectures in all subjects have been planned for the broad purpose of popularizing general knowledge. In the science group many lectures of a practical nature have been introduced, bearing on domestic science and industry. Lectures on physiology, anatomy, and hygiene have been arranged with the end in view of furthering in every manner possible the work of the Department of Health.¹

COURSES OF LECTURE-STUDIES WITH EXAMINATIONS

To encourage earnest study along definite lines the following courses of lectures by well-known educators were held and many persons have regularly attended these courses and have taken the examinations.

The development of fiction.—A course of twenty-eight lectures was given by Dr. Charles F. Horne, of the College of the City of New York, during the past season and examinations were given to a large number, many of whom passed creditably.

American history.—A course of twenty-eight lectures was given by Dr. William B. Guthrie, of the College of the City of New York, and examinations were held.

Economics.—A course of twenty-eight lectures was given by Professor Walter E. Clark, of the College of the City of New York, and for attendance and proficiency in examination at this course certificates were awarded.

Electricity and magnetism.—A course of twenty-eight lectures was given by Mr. W. Wallace Ker, of the Hebrew Technical Institute.

First aid to the injured.—Many courses having a direct practical

¹ Leipziger, *op. cit.*

bearing on human life have been given, chief of which are the courses of five lectures on "First Aid to the Injured" offered with the co-operation of the Society for First Aid to the Injured. This year the course was repeated in 26 centers by 12 physician-lecturers to audiences aggregating 17,616 persons and averaging 135. For attendance and proficiency in examination at these courses 780 certificates were awarded.

Examination questions used in connection with the courses in literature, history, economics, and first aid to the injured may be found in another part of this report.

Besides the courses followed by examinations, there were offered in 1909-10 one hundred courses of lectures covering a wide range of subjects, in many of which printed syllabi were prepared and distributed to the audience. It was the invariable practice of the lecturers after each lecture to hold a conference with the audience, at which questions were asked and answered, and helpful suggestions were given for reading and special study.¹

MISCELLANEOUS LECTURE TOPICS

Here is a list of titles chosen from the program of 1908-9: "Municipal Cleaning and Its Relation to Public Health"; "Housing in Europe"; "Goethe: Man the Mirror of the World"; "Walt Whitman and the Hope of Democracy"; "Mohammedanism and the Crusades"; "Uncle Sam's Own Story of the Declaration of Independence"; "The City Beautiful, or the Planning and Embellishment of Cities"; "How shall a Girl Earn a Living?"; "The Man That is Down and Out"; "The Songs and Basketry of the North American Indians"; "Applications of Electric Signals"; "The Life Story of the Honey Bee"; "The Treatment of Shock, Bleeding, Burns, Exposure to Cold and Frostbite"; "Life in a Coal Breaker"; "Real Cowboy Life in the Far West"; "Street Life in Paris"; and "A Trip to Central Africa." Altogether there were 1,575 different topics, covering the whole field of human interests, upon which the audiences were instructed and entertained.²

STATISTICS FOR THE SEASON 1909-10

During this period lectures were delivered in 166 lecture centers, distributed over all the boroughs of the city of New York. A staff of

¹ Leipziger, *op. cit.*

² Perry, *Wider Use of the School Plant*, 201-2.

708 lecturers spoke on 1,654 different topics before 5,196 audiences. The total attendance was 959,982, an average of 185 per lecture.

The increase in the number of courses of lectures during the past year was marked, and the interest of the auditors who attended courses of lectures proved that the desire for instruction on the part of a large number of the attendants is greater than the desire for entertainment. Several of these courses consisted of 28 lectures and were accompanied by quizzes, collateral reading, and examinations.

Some of the centers have become identified with definite types of lectures. For the last seven years lectures on science have been given each Saturday night at St. Bartholomew's. In other centers systematic courses in literature or history are given, extending over a period of years, so that those who attend regularly—as many do—receive the benefit of what may be considered a complete course of instruction in some one subject.

In centers where lectures are held twice weekly, the lectures on one night are of a more serious nature and on the other evening of a more popular character, so that all the intellectual desires of the neighborhood are appealed to; one purpose of the opening of the lecture course is to make the schoolhouse not only a place of instruction, but a place of recreation as well, and a community house in the largest sense.

Lectures in the Italian, Yiddish, and German languages, having for their purpose the preparation of immigrants for citizenship, have been successfully continued, and lectures on "First Aid to the Injured" and "The Prevention of Tuberculosis" have been made special features.¹

THE SPEAKERS

Lecturers from every walk in life are employed in this work. Besides a large company of professors and instructors representing fourteen colleges and universities, there are experts in city-planning, housing, and playgrounds, authorities on explosives, street-cleaning, and municipal water-supply, art students who have traveled in Italy and Greece, educators loaded with fresh spoils from the British Museum, distinguished scientists, eminent jurists, influential politicians, public-spirited physicians, and prominent citizens of all classes.²

¹ Leipziger, *op. cit.*

² Perry, *op. cit.* 201.

LOCAL SUPERINTENDENTS AND OPERATORS

During 1909-10, 134 local superintendents and 56 stereopticon operators have had charge of the work in the various lecture centers. In selecting the local superintendents, care has been taken to find men who understand the spirit of the lectures, and who are fitted by experience and personality to study the intellectual and social conditions of the community, and to shape their work accordingly. Teachers in the public schools have been found especially well fitted for the duties of local superintendents. The stereopticon operators, men of long experience, have done efficient service at the lectures and have taken good care of the delicate apparatus intrusted to their charge.

LOCAL COMMITTEES

In many lecture centers a local committee co-operates with the local superintendent and the office in calling the attention of the neighborhood to the lectures and in making suggestions that will supply the neighborhood need; this committee stands ready at any time to be called upon to work in connection with this department.

THE LECTURES AND THE LIBRARIES

There has always been a close relation between the public lectures and the various branches of the public libraries. With the completion of many new library buildings it has become possible to establish new lecture centers in the libraries and to transfer old centers to these buildings. On the evenings of the lectures the libraries have been kept open for one-half hour after the conclusion of the lectures, during which time the patrons have been permitted to withdraw books for supplementary reading. In some instances exhibits, illustrating the lectures, have been prepared and placed on view in library reading-rooms.

It has been customary to print on the various bulletins announcing the lectures the location of the most convenient branch of the public library, where books on the subjects of the lectures are especially set apart for supplementary reading. This has resulted in a very large increase in the circulation of the books on the subjects of the lectures. During 1909-10, 86 libraries co-operated in this manner with the public lectures.

The following are a few excerpts from the many suggestive reports

received from the librarians regarding the success of the public lectures during the year just concluded:

"My observation of the influence of the lectures upon reading is that 'the books brought before the public circulate much more frequently.'"

"There was a noticeable increase in the demand for books on music while the lectures on that subject were being given. There is also an increased demand for books on the French Revolution, lectures on which are now being given."

"The circulation of books on music and travel has increased considerably. A number of such books which have never circulated before have gone out several times since they have been placed on separate shelves."

"The lectures on history stimulated the circulation of books on that subject."

"My observation of the influence of the lecture upon the reading of the library is 'A demand for non-fiction books of all classes during courses of lectures.'"

"There has been an increased demand for books on 'First Aid to the Injured,' physiology, hygiene, etc., and also on the books to be read in connection with the literature courses."

"There has been a lively demand this season for books on Economics as a direct result of the lectures given at the Wadleigh High School. We have been very much helped this year through the good book lists which were suggested in the syllabus."

"The class books recommended on the printed circular by the Board of Education were in constant demand and many books of travel circulated in connection with the lectures."¹

LETTERS FROM THE PEOPLE

Many hundreds of letters of appreciation have been received from all classes of people.

The following extracts are quoted from letters by those people who have attended:

"We live two miles from the place of lecture and only the severest storm keeps us away, and it would be impossible to say which we like best."

"I am the wife of a minister; both my husband and myself observe with much pleasure the ever-increasing interest taken in the weekly lectures. In a place like this, remote from places of amusement, the lectures are a great boon."

¹ Leipziger, *op. cit.*

"I wish to state that First Aid lectures are very good and helpful, as my work lays around ship-yards and docks, where men are injured every day, and a little knowledge of First Aid often saves a man's life."

A woman seventy years of age writes:

"I have attended two lectures a week for the last nine years."

"It [Course on "Economics"] has given me the knowledge necessary to read the daily papers understandingly. I like the thirty-hour courses because I am working for a degree and can count the credits thus received."

"These lectures have kept me off the streets at nights, and have taught me something which would cost me a lot of money if I had to pay for them."¹

COST OF LECTURES

At the present time the average cost of each of the Board of Education lectures to the New York taxpayers is only \$26.05. This amount includes not only the lecturer's fee but the expense connected with the use of stereopticons, the scientific material used, printing, and administration. When the cost is computed on the basis of attendance, it amounts to only twelve cents per lecture for each person. A uniform fee of ten dollars is paid for each lecture, and, in spite of the nominal character of this fee, some of the most distinguished speakers in the country have appeared upon its platform.²

¹ Leipziger, *op. cit.*

² Perry, *op. cit.*, 207.

II. PUBLIC LECTURES, THE CLEVELAND PLAN

SARAH E. HYRE
Board of Education, Cleveland, Ohio

The Cleveland Board of Education, in making "Free Lectures and Entertainments" in school buildings a regular part of the work, had two objects in view: First, to utilize a large and well-equipped plant (invoiced at twelve million dollars) a greater number of hours than those required for the routine work of the schools, and to give thereby educational advantages to the patrons of the district, as well as to the adult boys and girls who had long since quit the schoolroom; second, to bring about a clearer understanding and greater co-operation between the teacher and parent as to the work and development of the child in the schoolroom.

The greatest difficulty that school officials have in carrying out their plan of work in the interest of the child is lack of understanding of school problems upon the part of parents and taxpayers. Free lectures upon practical topics relating to the home and school, entertainments which bring the parents and patrons in large numbers into the school buildings are designed to give to the parent and citizen in general, a larger vision of the work of the public schools.

Parent and teacher are engaged in one work with a common purpose. They are striving to make of each child a good citizen. This means that every boy and girl through the agencies of the home and school must be developed physically, morally, mentally, and socially, in order that they may hold their place with others in the world. This work requires a close co-operation between the home and school, the parent and teacher. It involves also in many cases the education of the rank and file of the community up to present-day methods.

There has been much confusion in the minds of educators and parents as to where the responsibility rests for the development of these different natures in a child, but bridging over a long period of years when the school was held to account only for intellectual development, we come to that new era in education which requires that the public schools shall prepare a child to express himself in all his relations to life.

It was with the purpose of bringing the parents and patrons into

fuller sympathy with the teacher and the great work of the public school as an institution that led the Cleveland Board of Education to create this department of work, to be carried out under the direction of a regular committee of the board known as the "Free Lecture and Social Center Committee."

The committee, which was named January 1, 1907, to undertake the work, desired to construct some plan which would be permanent and which would be so helpful and popular that the people would demand its continuance.

The next point considered by the committee was economy.

Every school system has so many needs and wants that discrimination must always be made in favor of essentials. Salaries are low, buildings are insufficient, so that any drain upon funds for extension work is looked upon as an unwarranted expenditure and draws the criticism of the taxpayer which, if persisted in, will kill any plan of work however valuable.

The third purpose was to create a popular demand for the use of school buildings and to stimulate an interest among organizations to assume the responsibility for the presentation of their work in the various districts. Cleveland has one hundred and seven school centers, forty-five auditoriums, and twenty-two large lower halls, which are attractive and equipped with electric lights, folding chairs, and plugs for lantern attachments. Parents and patrons of each district manifest much interest and preference for "their own school," and it is difficult to get them to go to an adjoining school building for any kind of a gathering unless it is held in "their own high school," and so it became the work of the committee to furnish a program for each building having either an auditorium or hall large enough to seat an audience. The committee proceeded at once to test out the educational as well as the drawing qualities of various programs. The people had to be attracted to the buildings in order to find out that it was not only pleasant but profitable to assemble there.

In the spring as soon as the programs for the year are ended, the committee begins to plan for the next year. Letters are sent out to principals of schools asking what *had been* most helpful and what *would be* desirable for the coming year. Music and illustrated talks and lectures draw the largest audiences.

The next work of the committee is to send out letters to organizations which are active along patriotic, civic, philanthropic, and hygienic lines, asking them to co-operate with the Board of Education and to

contribute a number of illustrated lectures upon the subject in which they are interested for the enlightenment of the general public, and to name a chairman among their number to supervise the details of their own program. The committee invites concert companies, musical organizations, glee clubs, quartettes, readers, lecturers upon art, etc., to contribute to the work as a means of elevating the standard of music and art in the community. Men and women of prominence and ability in the professional and civic life of Cleveland are invited to speak upon subjects related to the education and development of the child, as well as the responsibility of the home.

About five days before the lecture or concert, a card of invitation "To Parents" is sent out by the principal of the school in which the affair is to occur. The children delight in carrying it home, and often it is necessary for them to translate it into the foreign language of the parent. Adults and pupils of the seventh and eighth grades are admitted to the buildings upon these occasions, which this year (1910-11) number nearly two hundred. In order to give the evening a local touch, a patron of the district acts as chairman of the meeting and is invited to do so by the principal. For patriotic lectures, especially, the seventh and eighth grade classes sing patriotic songs, and very often they contribute to other programs. These pupils will soon be patrons of the school and the work will then devolve upon them of seeing that the school buildings are at the service of the people. They are bound to be a great aid in the future social service of the city of Cleveland.

So great is the demand for musical programs in the various districts that the board has purchased a Victrola which is used in building up a variety of programs in connection with recitations, drills, etc., by the pupils.

The principal and teachers of the building are present to greet the parents, and often the mothers' club, in connection with the school, assists the teachers in meeting the parents in a social way. In carrying on this work the Board of Education assumes the expense for printing a yearbook, and invitations "To Parents," also for heating and lighting of buildings and janitor service. The board is further responsible for the proper condition of the piano and occasional lantern service. In most cases, however, each organization furnishes the speaker, lantern, and operator. Those giving musical programs have their own chairman and assume responsibility for the entire evening's program.

The result of these efforts has been most gratifying to the Board of Education. There has come to the work the complete co-operation of the community. Organizations and groups of people are requesting the use of the school buildings, as a means of placing before large numbers of people important information and facts which they are promulgating. The patrons have come to understand that the school buildings belong to them, and that it is a profitable, as well as pleasurable place to go. Parents and teachers have become better acquainted and consequently understand each other better.

The plan as it has been worked out in Cleveland has had practically no difficulties. The teachers have been most hearty in their support. The Social Center Committee has been most careful not to put upon their shoulders the responsibility for the success, either of the program or attendance. However, the enthusiasm of the teachers in the building has much to do with the spirit of the occasion.

The adaptability of the Cleveland plan of lectures to any school system, great or small, seems to be its especial feature.

Every community has school buildings. It also has men and women of education and ability who are well prepared to speak upon the subjects of everyday life, who would be willing to contribute their time and effort in giving larger publicity to their experience and deductions.

In school districts where the Board of Education is so constituted as not to be able to supervise the work, it is possible for a citizens' committee, mothers' clubs, boards of trade, or any other organization to inaugurate and conduct "free lectures," securing from the Board of Education permission to use the school buildings. One thing is sure, that the success or failure of the "free lectures," with all they imply, is due largely to the personal supervision of the detail of the work. In the Cleveland plan of "free lectures" a secretary of the business department of the board looks after the practical arrangements, while the chairman of the committee keeps in touch with the principal of the school and the needs of the community.

It is impossible to compare the plan of one city with that of another, for each one has its definite object, and I know of no other city than that of Cleveland which has as its main purpose the "co-operation of the home and school." Personally I believe that the time is near at hand when every school district will plan to use the school building for all kinds of activities; when school buildings will be a common center for the consideration of all educational, social, and civic matters, and when the

responsibility for these activities will rest with the community and not with the Board of Education.

Perhaps there is no better way of giving in a concrete way the viewpoint of the Cleveland Board of Education and the attitude of the community toward the work, than by printing the "Foreword" from the "Annual Announcement."

"The Committee on Lectures and Social Center Development of the Board of Education begs to announce its program for the season 1910-11.

"In presenting this program the Committee is pleased to announce that the Board will be assisted in this department of the work by the following organizations and individuals: The Daughters of the American Revolution, the School of Art, Fortnightly Musical Club, Rubenstein Club, Normal School Glee Club, Young Ladies' Glee Club of Central High School, Glenville High School Orchestra, The Co-operative Employment Bureau, the Anti-Tuberculosis League, Consumers' League, Academy of Medicine, Cleveland Dental Society, Miss Gertrude Goss, Miss Grace Makepeace, Mr. W. J. Davis, Mr. W. R. Warner, Rev. Dan F. Bradley, Rev. Dr. F. T. Moran, Rev. Dr. Wm. W. Bustard, Rabbi Louis Wolsey, Miss Fannie C. Foote, and Judge Manuel Levine.

"Clubs and individuals are giving their support and time to this work, and organizations interested in various problems are anxious to use the school buildings under the direction of the Committee of the Board.

"The program has this year, as in the past, the elements of recreation and entertainment. Every lecture is supplemented by music and fine pictures, while every concert is designed to delight the popular audience.

"The programs as presented in former years and, in general, the methods of carrying them out have proven satisfactory and according to a unanimous verdict of the principals of buildings, 'the programs do not put a burden upon the teachers.'

"The topics which are to be presented during the winter are those designed to benefit the child and the community, and to give to the parent a larger vision of his own relationship to the work of the public schools.

"The Committee feels that it is fortunate in being able to announce the following program.

"The Board of Education in carrying on this work through its committee desires to arouse the interest and secure the co-operation of the community in it, so that the school buildings of Cleveland will always be centers where matters of general uplift and common good may be presented.

"THE COMMITTEE ON LECTURES AND SOCIAL CENTER DEVELOPMENT
"SARAH E. HYRE, *Chairman*"

III. VACATION PLAYGROUNDS

RANDALL D. WARDEN

Director of Physical Training and Playgrounds of the Public Schools of Newark, N.J.

This paper contains a statement of the facts pertaining to the development and growth of the vacation playgrounds in the city of Newark, N.J., a city of 347,000 inhabitants, separated from the great metropolis of New York by the Hudson River and about nine miles of marshy meadow land.

EARLY DEVELOPMENT

The first vacation or summer schools in the United States were opened in Newark in 1885 and in the city of Providence about the same time, but the vacation or summer playgrounds were not begun in Newark until 1899, when the Newark Educational Association, a women's society, obtained permission from the Board of Education to open six playgrounds in school yards. They employed twelve teachers, and operated the playgrounds at the expense of the association for six weeks during July and August. In the beginning these ladies obtained donations of toys and books from several of the large department stores; the Pennsylvania Railroad gave them a carload of beach sand, several of the supervisors connected with the public schools volunteered their services, and some sewing and manual training were attempted. The greatest attraction at this time was the free trolley ride given to the children of each playground by the Association.

The Educational Association continued to operate the playgrounds with the assistance of a small appropriation from the Common Council until 1902, when it prevailed upon the Board of Education to take over the management and financial support of them. The equipment consisted of: one wooden swing frame, holding three swings; three wooden saw-horses with planks for see-saws; one wooden sand box, 16 feet square, with an awning over it; two movable wooden basket-ball goals; one basket-ball; a few rubber balls and jumping-ropes; a miscellaneous collection of books, blocks, and dolls.

Each yard had been in charge of two women instructors with little training or experience in playground work. Upon assuming control of the playgrounds, the Board of Education appointed a supervisor to assume the management of the work, and opened ten school yards and three park playgrounds. The supervisor found that as the playgrounds had been carried on there was little organization, no general plan of work, no definite aim, no intelligent knowledge of the methods of teaching playground games, and lack of attention to duty. The activity consisted mainly of aimless running about, so-called free play, except as a few monopolized the apparatus. The neighborhood children attended very indifferently after the first week of curiosity, and toward the end of the term the attendance dropped off perceptibly until it was a question whether the interest taken by the children in the playgrounds was sufficient to pay for the cost of maintaining them.

In 1905 the writer was appointed director of playgrounds, and with the idea that some improvement might be made if experienced teachers were put in charge to organize and work up a regular attendance, he urged the Superintendent of Schools to appoint a few chosen teachers, the very best of the regular school system, to take charge of the various playgrounds. He urged also the appointment of young men to instruct the boys in basket-ball, baseball, and athletics—hitherto a neglected feature with a teaching force consisting solely of young women.

The first year that the writer was supervisor there were twelve playgrounds with thirty-one teachers, and the total average daily attendance was 3,301, or an average of 275 for each yard. The next year saw the introduction of the new plan of appointing teachers of known organizing ability to run the playgrounds, and the addition of young men instructors to attract the older boys for team games and apparatus work. Fourteen playgrounds were put in operation with a force of fifty-eight teachers. The total average attendance was 7,101, or an increase over the year previous of more than 100 per cent, giving each playground an average daily attendance of 507. It has been the supervisor's experience that few physical-training teachers can equal the organizing ability of the classroom teacher who has had regular school experience.

Another radical improvement adopted was in the method of providing apparatus. It had been the custom to let a contract to some local carpenter, who made and erected the swings and see-saws, etc. After some unsatisfactory experiences with contract work, the Board of

Education ordered their own repair department to make the apparatus as specified by the supervisor and passed upon by themselves. This centralized the responsibility, and the board received better apparatus with less delay, and then had it taken care of after the season closed by the same department which was, of course, interested in its preservation.

After having effected the appointment of better teachers, and prepared for better and more extensive apparatus, the next step was to outline a plan by which the school yard and building should serve as a neighborhood playground and fulfil all the recreational needs of the boys and girls out of school for their summer vacation. The following plan was carried out step by step, not put into practice all at once, but gradually growing and expanding, each year seeing more features of the scheme put into effect. The teachers had to be trained; the Board of Education proceeded but slowly with appropriations to complete so extensive an outline; the public had to be made to appreciate and intelligently understand what was being done by actual demonstration of results.

SUGGESTIVE OUTLINE

The features of the plan which have been accomplished and those which are being worked out are as follows:

I. Yard and School Equipment.

More shade.

Better surfacing of yards.

Elimination of dust by sprinkling.

Separation of boys' and girls' yards.

Better play equipment.

More athletic equipment (track, jumping pit, hurdles).

More gymnastic equipment.

II. Use of School Building.

For classroom instruction in sewing, kitchen gardening, kindergarten work, raffia weaving, folk-dances.

Library.

Quiet game room.

Song recitals.

Theatricals.

Manual training.

Cooking.

Clubs.

III. *For Better Instruction.*

More playgrounds.

A longer season than seven weeks.

One teacher for every subject taught in the playgrounds.

A Normal playground course for teachers.

a) Better-trained men teachers.

b) Better-trained women teachers.

A syllabus, or course of study.

Higher salaries for teachers.

Medical inspection.

Visiting nurses.

Attendance officers.

Teachers' daily plan book submitted to supervisor.

Daily schedule of work posted conspicuously in each playground.

Special supervisors to be in charge of dancing, gymnastics, athletic industrial training, kitchen gardening, kindergartens, clubs.

IV. *For Better Apparatus.*

Samples to be submitted of all apparatus and materials before purchasing.

Advertising for bids on apparatus by Board of Education.

Specifications by the supervisor of requirements for apparatus.

The employment of a mechanic to take care of erection and repairs.

More permanent yard apparatus (galvanized pipe instead of wood).

V. *For Saving Expense in Maintenance.*

Special storerooms and closets at each school.

Inventories of supplies.

Special equipment to be made in manual-training shops.

Special equipment to be made in the playgrounds.

Development of the Playground City idea and the training of pupils' assistants.

VI. *For Developing Interest.*

An annual exhibition at the park.

An annual athletic meet at the athletic field.

Soccer, baseball, and basket-ball leagues.

Public song festivals.

Public theatricals.

Local playground entertainments.

Annual industrial exhibition of articles made in the playgrounds.

INSTRUCTION

With this outline as a guide, the progress of the school playgrounds has been steady. Soon after the change in the appointment of teachers, the supervisor began his normal course for the instruction of playground workers. Most of the young women appointed as assistants are from the Newark Normal School. These girls are taught games, folk-dancing, and physical-training exercises two hours a week during their regular term work by the supervisor. In their normal-school course they are also instructed in raffia work, paper folding, cardboard sewing, and all the regular public-school occupational work. This is now augmented by a special course of playground work after school during the months of April and May when all applicants are brought together in one of the school gymnasiums and given concrete instruction in the particular games, exercises, and dances which are to be used for the coming playground season. The director of manual training also gives a series of special lessons for summer-school and playground workers. The great drawback, so far, is the impossibility of instructing the men teachers in the same way. College men, for the most part, are not properly trained, and as yet we have not had efficient service from the men workers. College physical training departments are not so organized as to turn out young men who have at their command a repertoire of group games, physical-training exercises, and marching tactics. A pertinent question would seem to be, "Why do not the physical directors in colleges formulate a definite textbook of physical training, similar to the infantry drill regulations of the army, and see that their pupils absorb and learn to impart some part of what has been taught them?" Such training, if it embodied some such working plan as the squad, platoon, or company, would at least give young men an idea of group organization, something which they seem utterly unable to develop in the playground.

USE OF SCHOOL BUILDINGS

One of the greatest innovations in Newark has been the opening of the school buildings for purposes of playground instruction. Hitherto it had been the custom to have all the activities of the playground conducted in the open school yards. In the hottest part of the day the heat and glare of the sun drove the little children to the shelter of their homes. Meanwhile the school buildings, with their cool rooms and all the attractions of the kindergarten for the enjoyment of the little ones, remained

securely and officially locked. Indeed, the building was open during the morning, for from 8:30 until 11:30 A.M. the summer schools held session; but, after that hour, the summer-school teachers locked their desks and closets, and the janitor turned the key and locked up for the rest of the day. The supervisor took to the city superintendent the proposition to open certain of the kindergartens for the playgrounds, and permission was granted. Under competent kindergarten teachers this has now become a regular feature of the playgrounds.

Another subject which interested the writer was kitchen gardening. It had been attempted by the Educational Association, but very little could be accomplished under the disadvantages of a playground exposed to every breeze, with perhaps a basket-ball game going on in the immediate vicinity to the imminent danger of the dishes on the table, or upsetting the dignity of a particularly formal invitation to be seated for tea. Here again the need for the use of the school building was apparent, and use of the building was granted.

The introduction of folk-dancing for boys and girls was another powerful factor in increasing and keeping up the attendance, and to facilitate instruction the auditoriums or gymnasiums of the school buildings were thrown open, or if there were neither gymnasium nor auditorium, the desks were removed from a large classroom and a piano moved in.

Then followed the need for rooms for industrial training: chair caning; weaving; sewing; kite making; rope splicing; fancy work; whittling; bent iron work; dyeing; basketry; rug making; block printing; hat weaving, or crocheting. Later came the library room with boxes of books lent by the Free Public Library, collected and changed every week.

The quiet game room is at present in process of evolution. We have the quiet games, such as dominoes, checkers, crokinole, authors, States, Capitals, etc., and it is the intention to run this quiet game room on the club plan, allowing the use of it to each club a certain part of the day and making the club officers responsible for the maintaining of order and the care of the game materials.

During the playground season we have used the school buildings for song recitals or festivals, for theatricals, and for local entertainments and exhibitions. Up to the present time the Board of Education has not granted the use of the manual-training shops or the kitchens, but it

must be understood that these are opened for the summer schools which hold their sessions in the morning.

ORGANIZATION

Every year some progress in improving instruction and organization has been made. We now give a normal course in playground work as described previously. There is a specific syllabus of instruction and play.

For two years teachers have been required to keep daily plan books which are submitted to the supervisor. Teachers' individual schedules of hourly work or periods are posted conspicuously, so that the supervisor or the playground director can see at a glance the work for any given period. Nurses visit the playgrounds, the children are marched before them, and any child requiring exclusion or medical attention is looked to. Attendance officers make daily visits, and while attendance is not compulsory, yet these officers lend great assistance in special cases of discipline and in preventing loitering and mischief in crowded thoroughfares.

Our playgrounds now have an assistant supervisor who takes special charge of the physical training, games, and athletics, and a special teacher of folk-dancing whose entire time is spent in teaching and supervising this most interesting and popular part of the playground activity.

One of the great needs now is a club worker, and a skilled teacher to supervise and develop the industrial branches.

APPARATUS

The improvement of apparatus during the last five years has gone steadily forward. From the first meager equipment the list has grown until now it makes a lengthy inventory. Some of the special items which we consider of the most importance are:

Heavy apparatus:

- Ball-bearing swings, on galvanized pipe frames

- Set basket-ball goals

- Bucks (canvas covered; galvanized legs)

- Giant strides (rope handles)

- Stationary galvanized pipe gymnasium frames (to which are attached climbing ropes and poles, flying rings, horizontal bars, inclined and horizontal ladders, and sliding poles)

- Baby swings

- Stationary galvanized pipe see-saw frames

Parallel bars (movable)
 Rocker boats
 Shoot-the-chutes
 Sand boxes (small and large)
 Benches

Athletic apparatus:

Jumping pits
 Jumping standards
 Hurdles
 Cinder tracks

Light apparatus:

Flags
 Indian clubs
 Long wands
 Short wands
 May-poles

Games:

Snare drums
 Base drums
 Basket balls
 Indoor baseballs
 Footballs
 Volley-balls
 Bean bags

Oat bags
 Bocci balls
 Short jump-ropes
 Rubber balls
 Rope quoit sets
 Pails and shovels
 Ten-pins

Quiet games:

Authors
 Battles
 Checkers
 Crokinole boards
 Picture puzzles

Dominoes
 Lotto
 Nations
 States

Kindergarten:

Blocks
 Colored crayons
 Paper
 Colored sticks

Gift rings
 Worsted
 Paste
 Colored mats

Paper strips
 Peg boards
 Perforated sewing cards
 Lentils

Kitchen gardening:

Clothes baskets
 Clothes pins
 Covered vegetable dishes

Toy irons
 Folding clothes boards
 Tables

Dishes	Knives, forks, and spoons
Dessert spoons	Tubs
Dish cloths	Handkerchief wash boards
Table cloths	Dish pans
Napkins	Meat platters
Dust cloths	Tea sets
Dust pans	Towels
Mop cloths	Trays
Scrubbing brushes	Brooms

Manual training:

Awls	Needles
Cane	Pliers
Coils of Venetian iron	Raffia
Hemp twine	Reed
Kite sticks	Snips
Knitting spools	Tissue paper (for kites)
Knives for whittling	Weaving needles

Sewing:

Blue denim	Scissors
Cheese cloth	Ticking
Colored print cloth	Thimbles
Drill (brown)	Thread
Indianhead muslin	White lawn
Macrame cord	Wool
Needles	Outing flannel
Pins	

Samples are now submitted of all materials. Specifications are drawn up and bids advertised for on all supplies for the playgrounds.

ECONOMY

A man is regularly employed by the Board of Education to erect apparatus, attend to repairs, and put everything in order for the next season's work. In this way the board has been saved a great deal in the way of expense. The saving of money in the cost and maintenance of playgrounds is a thing not to be lightly considered. Money can be absolutely thrown away in the purchase of cheap articles, constructed with no consideration of durability, a feature which must be considered where thousands of children are to use and handle things every day. Again, a great deal can be wasted by careless storing of supplies after the

season has ended, and in not having all damaged supplies repaired before the opening of the next season. It is poor management to nail up supplies in packing cases, to be left in the care of the janitor until the next season. There should be store-rooms and closets provided, where the supplies can be inspected, where they are easy of access, and can be kept in orderly arrangement. School architects should look out for the construction of these needed accommodations.

Some equipment has already been made for the playgrounds in the manual-training shops of the regular schools, especially at the Warren Street Industrial Grammar School. The pupils have made wands, peg boards, rope quoit sets, bean-bag boards, hurdles, and checker boards.

The playground children make their own bean bags, oat bags, dolls, kites, baseball bases, curtains for curtain-ball, folk-dancing costumes, etc.

In order to lessen the expense of teacher's salaries as well as to develop self-government, the playgrounds have been encouraged to organize city governments, and some have done so, electing a mayor, board of aldermen, police department, fire department, street-cleaning department, etc., and these departments under the direction of their executives aid in the manifold duties of playground life.

POPULARITY

That the interest of both children and parents has increased each year is shown by the fact that more and more school yards have been opened for playground purposes, and the Board of Education has annually increased the appropriation of funds. About \$18,000 was spent last year.

While the board has not as yet kept the vacation playgrounds open for a longer season than seven weeks, still it is worth mentioning that from November to April they maintain after-school recreation centers for girls. At these centers the girls of the sixth, seventh, and eighth grades, who have the permission of their parents and principal, gather for fun and instruction in folk-dancing, physical exercises, and games under teachers appointed by the board. There is a pianist to play for the dancing, and the spirit, exuberance, and delight of the girls is wonderful to see, a revelation to the mothers in whose school days such exercise for girls was unheard of.

The boys have their gymnasiums, their teams for soccer, basketball, indoor and outdoor baseball, all under the direction and management of a Public School Athletic Association.

In connection with the evening schools, gymnasium classes are conducted by regular gymnasium instructors. These are not recreation centers in the sense that the boys and girls of the neighborhood can go in and out at will. Instead, they must register with the principal of the school and go into the gymnasium to participate in regular organized classes, conducted after the best models of gymnasium practice.

There is no longer any question as to whether the interest taken by the children justifies the playgrounds. The attendance last season was eight times greater than in 1905, a remarkable rate of increase. Many parents visit the playgrounds with their little ones to look on or to help swing the babies. This is encouraged, and every week special entertainments or exhibitions are given by the children for the purpose of bringing out the parents.

At the close of each season there is held an annual field day when all the children of the twenty playgrounds gather at Branch Brook Park to participate in huge mass drills, folk-dances, and gymnastic exercises. In 1909 the American Biograph Company took pictures of the entire exhibition and displayed them in motion-picture views through all parts of the country to the great interest of their patrons. Then, too, there is great rivalry between the playgrounds at their annual athletic meet at Weidenmayer's Park, when prizes are offered for the winners of the various events for boys and girls.

Last year an exhibition of the industrial work accomplished in the playgrounds was exhibited at the Public Library, and an astonishing variety of articles was displayed. This exhibition created great interest, and hundreds of people visited it daily. Many of the articles made are given to the day nurseries and are of service to the little ones.

It is with considerable civic pride that I am enabled to state before closing that the school playgrounds are only part of the extensive recreational work done by the city of Newark. The Essex County Park Commission maintains most excellent playgrounds and playfields, and the Municipal Playground Commission has within the last three years undertaken a unique development of the community settlement playground.

IV. ORGANIZED ATHLETICS

C. WARD CRAMPTON

Director of Physical Training in the Public Schools, New York City

I

In the good old days when you and I went to school, three o'clock was the hour of happy release. We went out-of-doors to play, leaving the school, a place of punishment. Today, both the school and "out-of-doors" have changed. On the whole, the streets are still, from the child viewpoint, interesting and lively places to play, but they do not stimulate play as they used to. Child instincts are more related to "stock and stone" than to asphalt and iron. This, with many other things, has made much of our out-of-doors "no good" for play.

Just when and where this change is most evident and its bad results obtain, just then and there is the school building made over into an "out-of-door." It is our adjustment, often the best we can make, to keep play from dying.

II

Athletics are forms of competitive play. As such, they present certain aspects for our brief consideration.

They are a biological advantage: Physical activity in the child is necessary for body health and orderly physical development, and the main instinct which drives children to muscular work is the play instinct. If this is weakened by innate physical depravity, or stifled by the conditions of civilized life, a flaccid physique and a distorted development result. The individual suffers and the race declines.

Play is educational: It is essential in learning to live. The affairs of the adult world are all practiced in mimic fashion in childhood and prepare for living. This is vital; learning by doing and nature's course of study in play cannot be replaced by books. Modern organized athletics are the highest development of play and the practice which they afford prepares directly for the proper discharge of duties in the civic, social, and business world which are rapidly becoming more complex.

Play is a school affair: For the school must prepare for all of life. Moreover, it is usually the one bond that holds the children of a section or a community together. Play will organize itself on the block or street-gang basis and become distorted when it is undirected. The school would fail in its purely educational duty if it neglected to use the educational play series of developmental instincts for its own scholastic ends.

III

There are two forms of athletics, the intensive and the extensive. The first is the popular kind, where a high school of a thousand boys will have a team on which a dozen boys may compete for the school, or where three or four athletes will represent a whole college. It is the natural form of athletics, selecting (in mediaeval fashion) the "champion" of the group to defend its honor. Measured by rigid hygienic standards it is of little use for it merely results in the training of those who are already most physically able, and neglects the ninety and nine who need it most. There are other standards, however, which will appear below.

Extensive athletics are the result of the thesis, "If athletics are good, they are good for all," and is an endeavor to use athletics as one would use any other physical-training procedure, scientifically, in safe dosage, for the good of each and all, in due and proper proportion to need and ability. As students of the situation and administrators of educational affairs, intensive athletics appeal to our hearts, extensive athletics to our heads.

IV

In the fall of 1903 there met in the office of one of the members of the Board of Education of New York City a group of men determined to extend the training of athletics to all the school children of the city. The composition of this group was significant—there were school principals, superintendents, and commissioners, physical-training experts, social workers, and public-spirited men of financial ability and willingness. While its great aim was to extend athletics to all boys, it began with recognized forms of sport which were admittedly for the few best athletes. In the beginning its method was to make athletics popular, then to extend them to all. It held a meet in December, 1903, open to all school boys, and 1,700 were entered. This aroused the enthusiasm it

was planned for, and paved the way for the organization of a series of annual indoor and outdoor athletic meets—baseball and basket-ball championships, etc., to which over one hundred schools now regularly send their teams.

This intensive plan was pushed further by the organization of district leagues, twenty-three in number, and these held their athletic meets with the result that athletics became focused in many widely separated neighborhoods, and multiplied not only in number of competitors, but in their appeal to local community interest. The fixation of the athletic event in the community was regarded a distinct advance and the advantage was pressed: the individual schools were urged to hold their own meets with the result that 150 schools managed their own series of contests in the last school year. This was most satisfactory.

To sum up the results of the intensive form of athletics: We now have about 15 per cent of the grammar-school boys competing for their schools in baseball (indoor and out), soccer football, basket-ball, and athletics, and about 75 per cent competing once or twice a year in the district and school games. The importance of these results is very great. One cannot attend a school meet with its twenty or more events, its thousand competitors and five thousand shouting partisans in the balconies of an armory without being profoundly impressed. It is an exhibition of one of the most fundamental old racial human interests, inseparable from life, yet otherwise unfostered and hidden by the conditions of modern life. It is an instinct vital to the continuance of the race. Its suppression will mean racial depravity and its conservation racial preservation.

Of course, no one believes that the running of a single 50-yard dash does the boy much good or (since he has been examined by a physician) much harm. The good lies in the course of training which he has undergone, not the competition. Yet he would not train if it were not for the competition. Cigarettes, easy and semi-vicious habits, careless eating, and general unhygienic laxity are not to be eliminated from boy life by anything less than a compelling interest. This interest competition supplies.

The competitive impulse is supplemented by the most real sense of duty to the group. The boy strives to be the chosen representative of the school, and to defend its honor with his whole energy and enthusiasm. It is this that trains for patriotism in the *boy world* in a real and

tangible, *intimate* way, and its lessons become much more vitally a part of character than the lessons from the books.

One of the best results of athletics is the effect upon the parents in the gallery. The public school means something more to them than the riddance of an irritating boy-presence in the home, the deprivation of his money-earning ability, or the insurance of the boy's future success in life. It means that their child is entered in the contest of young knight-hood, striving for the laurel to bring home to the family, while the school has become the beneficent state that holds the lists. It takes an occasion like this to strip petty modern husks from King Arthur's children, whom we are, all.

Intensive athletics have their great social and stimulating function, but still they do not satisfy the physical educator whose duty lies with the weak rather than with the strong. To meet this requirement, extensive forms of athletics have been devised. During the fall of each year, most of the school boys of New York City "stay in after school" and in the open-air playground practice the standing broad jump, for before December first their records will be taken and the average of each class will be sent to the Secretary of the Public Schools Athletic League. Perhaps their class will have the highest average in the borough, and the championship trophy of Brooklyn, Manhattan, or the Bronx will be placed in their classroom to tell all who may see that the class to which they belong is the finest of its kind.

As soon as this is settled, "chinning" is started, and later in the spring, running is the competition. By this means, each boy in the class, regardless of his weakness or his strength, is stimulated to train. He trains not only once a year but three times, in not only one event but in three. This is an ideal plan, it reaches all boys, provides continuous training, avoids specialism, and insures all-around development.

Another form of extensive athletics is the "Athletic Badge Test." This requires the boy to make standard performances in three events, running, jumping, and chinning. There are two badges, a junior of bronze for the lower standards, and a senior of bronze and silver for the higher standards, and each bears the figure of the Winged Victory. To win this prize the boy must also qualify in scholarship and have a good straightforward, upright posture. Just 7,000 of these were won last year by 7,000 boys, who wear the badge of the city given to its boy athletes to certify that there is one worthy to bear its mark of distinc-

tion. This badge is worn proudly, and, I am convinced, with honor, for I have never seen a boy on the New York City streets wearing it who did not appear and act as if he had a sense of the distinction conferred upon him.

In reviewing the seven years of public-school athletics, one observes that the intensive form has been successful in making athletics popular and within the common ken and experience. What is more significant is the fact that extensive athletics have become possible and permanently established, and what is still more to the point of the present series of theses is the increasing tendency of the individual school to take up its duty, to run its own athletics for itself and its own community. One hundred and fifty schools in the city of New York have already organized and managed an athletic meet of their own, and this number will steadily increase.

While all this is true, yet a more important result of a similar nature has been obtained. Many principals have realized that athletics are valuable social and hygienic school affairs and return large benefits to the pupil and to the school organization as a whole. While for many this is the result of deliberation in whole or in part, yet it is also largely the result of pressure of a community and pupil interest which cannot be withstood. Schools have organized intra-school athletics, each class having its one or two teams in basket-ball, indoor baseball, and what not. The school becomes a league, an organization in itself of a thousand or more members, with more boys practicing and more teams in the field than there were in the whole of the city of New York ten years ago.

In these schools, which are many, athletics have come to their own and have begun to discharge their full and great duty. May their number increase!

All this training, practicing, and competition require the use of the school building after school is out. Teachers must also remain after school to train and manage the boys, and it is much to expect that when the day's work is done that they will "stay in" and devote their own time, which might be profitably spent in study or recreation, to the benefit of the pupils under their care. Yet the actual number of men teachers doing this work day after day in the public schools of New York City is over 700. This work has received some recognition from the Board of Examiners, who give credit when application is made for a higher license. This is right, for the practice in organizing fundamental boy

interests and the knowledge gained of growing boy nature are important factors of success in responsible educational positions.

It was recognized early in the progress of the Public Schools Athletic League that girls were as important as boys, even though athletics were not their peculiar and paramount interest. For these, folk-dancing and carefully guarded athletic events were introduced by calling together the interested class teachers for instruction once a week. These teachers learned the folk-dances and games, returned to the schools, organized after-school clubs and delivered over to them what they had learned. Over 1,100 teachers registered last year and hundreds of clubs were organized in the schools.

The Athletic League was formed to bring back into the lives of our children their birthright of competitive play, and to weld it into the educational procedure of a great city.

Its labor has been to preserve for its swarming citizenship the things most human and essential to companionship and living; its immediate results give promise of ultimate success, and success in these things is worth the labor.

V. EVENING RECREATION CENTERS

EDWARD W. STITT

District Superintendent of Schools, New York City

There has been a great tendency during the past few years toward the urbanization of our population. Statistics show that while in 1860 only 16 per cent dwelt in cities, in 1900 the number had increased to 33 per cent, and the census estimates of the present year prove that at least 50 per cent of our population dwell in crowded cities. The figures thus far show that some cities have more than doubled their population in the past decade. This tremendous urban development at the expense of village or farm life, has gradually been receiving the attention of educators and sociologists. It is a civic problem of great importance to determine just what recreative advantages should be provided by the cities for those who are forced to live in congested neighborhoods.

Many sermons are preached in the pulpits and long articles are published in the public press about the conservation of our natural resources. The protection of our forests, streams, and mines is important, but not nearly so vitally related to our future progress as the conservation of the young people who are to be the future citizens of this Republic. The younger children are well cared for in our modern schoolhouses, both as regards their moral, mental, and physical welfare. When, however, they leave school to go to work, and in our great cities they do so in large numbers at the very earliest legal age, the problem of their physical well-being becomes especially important. Too often, the owners of factories, in a desire to save all possible expense, crowd the operatives in sweat shops without proper light and ventilation. After long hours at hard toil, the overworked young men and women crave rest and recreation, which their humble homes cannot provide.

Most of the churches have not been alive to their opportunity to furnish proper facilities for caring for the great mass of operatives and factory hands from the close of their daily toil to their hours for sleep. It has remained for settlement houses to furnish some advantages for this class of toilers, and the work of Jane Addams in Chicago and Jacob

Riis in New York will always rank high among the leaders of those who have tried to improve the conditions of the young wage-earners. For years New York neglected its opportunity, but finally in 1901, through the efforts of private citizens who furnished the necessary funds, eight schools were opened to provide recreative activities at night. The average attendance the first winter was 675. In 1902, twelve schools were opened, and the average attendance was 2,657. In 1905, twenty-one centers were in operation, the nightly attendance being 7,266. Last year the work was extended to all the boroughs of our metropolis, and the average nightly attendance was 12,985. During the year, the aggregate number of men and women who enjoyed the privileges afforded by the centers reached the total of 2,165,457.

WHAT OTHER CITIES ARE DOING

Inquiry by correspondence with the superintendents of schools of the leading cities shows that little has been attempted. Boston had recreation or social centers, but abandoned them in 1906, owing to the expense involved. Private individuals are now endeavoring to renew the work. Rochester has had signal success with the social centers, the special object of which has been to organize civic clubs, using the schools as meeting-places. Lectures by prominent speakers upon social, historical, and patriotic subjects have been encouraged. The first attempt to employ moving-pictures in the centers in Rochester resulted in large and enthusiastic audiences. In St. Louis the only work reported is the use of school buildings for associations of parents, whose object is co-operation with the schools. Holyoke, Mass., reports no work of this character under the control of the Board of Education, though last winter one school building was opened as a social center under private supervision.

In Philadelphia social centers are established in about a dozen school buildings, but they are conducted by various civic societies, the Board of Education furnishing only the building and janitor service. In Chicago the last report shows two evening recreation centers, their general spirit and management being similar to those found in New York. Neither of the schools used for the purpose, however, has an assembly-hall or a gymnasium. The centers are conducted by the principals who are in charge of the day schools in the same buildings, and who are therefore especially interested in the social problems of the district

in which they work. The sum of ten thousand dollars has been appropriated by the Chicago Board of Education to extend the work during the present year.

The work of the social centers in Cleveland has secured the continued interest of the community. Lectures upon patriotic topics have been given in twenty schools, and vocal and instrumental concerts in a number of others. In the effort to secure a closer co-operation between the school and the home, a course of "Plain Talks to Parents" by prominent citizens has been a special feature of the work. In Cincinnati the gymnasiums in eight of the schools have been opened at night, part of the work being directed by the University Settlement and local organizations. Free choral work is also provided on one evening per week, and free lectures are given at three centers.

In Milwaukee the Board of Education has conducted three social centers which were well attended by young people from fourteen to sixteen years of age. Older people also were welcome to enjoy the social privileges provided. Among the activities were debates, dramatics, concerts, physical training, and classes in sewing, basketry, and music. Pittsburgh opened in 1909 one school under the management of the Playground Association. Classes in domestic science and woodwork, physical training, games, and clubs occupy five evenings per week.

So far as careful inquiry has been able to discover, the above cities are all in which the boards of education have permitted or encouraged social or recreation centers.

PRESENT PLAN OF ORGANIZATION

For the current school year provision has been made for conducting thirty-eight (38) centers, in New York City, twenty-six (26) for boys and men, and twelve (12) for girls and women. Most of the centers are opened every night of the week, except Sunday, the hours being from 7:30 to 10 o'clock. In the less congested districts the centers are open for only two nights a week (Friday and Saturday), thus affording no interference with the evening schools in session from Monday to Thursday inclusive.

Each regularly organized center is in charge of a principal who is expected to be a practical gymnast, and who has taken a full course in athletics at college or at some physical-training institute. Efforts are made to secure as principals men and women who are endowed with the true

social spirit, and who, by their enthusiastic love for the work, are real missionaries in the elevation of the social, moral, and physical standards of the neighborhoods in which the centers are located. No problem is more worthy of the attention of a Board of Education than the selection of the proper executives to be placed in charge of this work. The principals must be tireless in energy, resourceful in initiative, attractive in personality, indefatigable in the capacity for work, indomitable in courage, refined in manner, and above all, as Theodore Roosevelt once remarked, "they must love their job."

The selection of teachers is almost equally important, though, if the principals are capable and earnest, they will soon train persons of average ability to be satisfactory assistants in the work. Financial inability often prevents the appointments of as many teachers as may be necessary. In certain buildings, also, the architectural construction may be such that the playground or gymnasium is subdivided by walls or columns, and more helpers will be needed for the work. The largest center in New York has an average attendance of 963 pupils, and the work is directed by one principal assisted by seven teachers. As a rule, in the boys' and men's centers the principal is provided with one or two gymnasts, one club director, one teacher for the game room, and one teacher for the study room. In girls' centers a pianist is also provided for the folk-dancing and athletic drills. When baths are in use, a bath attendant is provided.

NATURE OF ACTIVITIES

Recreation centers, as they are now organized in New York, include the following departments: clubs, gymnastics, game and library rooms, mixed dancing classes, and study rooms.

Clubs.—The most vital forces in every successful center are the clubs. They not only give an *esprit de corps* to the movement, but they are also the means of attracting large numbers of young men and women who are interested in forming an organization with some definite aim. These clubs may be classified as: athletic, social, literary, philanthropic, and civic. In all of them the director of clubs insists that the members conduct their meetings according to the rules of parliamentary procedure, and valuable lessons in practical civics and self-government have been learned by the members of the 774 clubs organized during the past year.

In all the clubs written minutes of the proceedings have been regularly

kept, and the secretary's duties have been made of considerable importance. In most of the clubs there has been an attempt to have some literary work, even though it be of the most elementary nature. It must not be forgotten, however, that the great majority of the club members are busy at their arduous labors, generally physical, during the day, and the club meetings must therefore be recreative in character, and not so severely mental as to discourage the attendance of those we are striving to reach. Some of the purely literary clubs have done very creditable work, and excellent debates with other clubs in the center have been conducted. Some very successful debates with other centers, and open meetings of a general literary nature, have served to furnish a larger audience for the aspiring young speakers than could be given in the limited circle of the club. Probably the most successful public meeting was that of the Maxwell Civic League of E.R.C. No. 141, Brooklyn, at which an audience of over twelve hundred enjoyed a delightful program, the chief number of which was a dramatization of a meeting of the Board of Estimate and Apportionment. If Mayor Gaynor, Comptroller Prendergast, and the other members of the real board had been present to listen to arguments advanced by the young speakers, there would assuredly be an increased appropriation granted to the Board of Education. Several dramatic clubs have flourished, and while the plays produced have been staged with great difficulty and elaborate costumes could not be supplied, ingenious attempts at realism have been made. A performance of *Little Women* given by the Louisa M. Alcott Club of E.R.C. No. 177 is worthy of favorable comment.

In the larger centers, an executive council or senate, consisting of two delegates from each club, has been organized. Their meetings, held biweekly, have done much to unify the work of the center, and to make possible more important club activities than before. Many of the clubs have provided pennants or banners for their club rooms, and have adopted distinctive colors and pins. In a number of cases photographs have been taken of the club membership, which in later years will be valuable souvenirs of the happy evenings the members have spent in their clubs. It is impossible to estimate a greater good to our city in the way of a broader citizenship and a higher standard of living than can come from these clubs, wisely guided by the directors and principals. In a few years the young men will have attained their majority, and will be citizens who appreciate patriotism as higher than party, and the

general good of the city as being the proper desire of every adult inhabitant.

Gymnastics.—Effort has been made to utilize every form of physical exercise possible in the limited quarters of our school playgrounds. In the newer buildings the advantages of higher ceilings and freedom from so many supporting columns have been contributing factors of great importance. So far as possible, the following program has been attempted:

a) Gymnastics:

(1) Calisthenics. (2) Drills (Indian clubs and dumb-bells). (3) Apparatus work.

b) Athletics:

(1) Dashes and potato races. (2) Relay races. (3) High and broad jumping.

c) Games:

(1) Basket-ball. (2) Indoor baseball. (3) Hand-ball. (4) Volley-ball, center-ball, etc.

In girls' centers, instead of the regular athletics, folk- and aesthetic dancing has been the feature of interest.

In a number of centers, classes have been organized for the young men intending to take the physical examinations necessary for the fire and police departments. These classes have been very successful in preparing many men who have succeeded in passing the rigorous tests required. It is to be regretted that in many cases the interest of the men in the centers has ceased after appointment, owing frequently to a change of residence due to their new appointment.

In all matters pertaining to athletics and to dancing there has been no attempt to train specialists or star performers. The effort has been to encourage regular and systematic training which would lead to better physical development of the many, and secure a higher average of strong young men and women.

Mention should be made of *The Observer*, a publication issued by the young men of E.R.C. No. 188, and containing important items of interest regarding the athletic progress of all the centers. Several issues have been published, and much has been done by the organ to stimulate a friendly feeling among the centers. It is to be hoped that this experiment in amateur journalism may continue to be successful.

Tournaments and athletics meets.—A very successful basket-ball

tournament was held during the spring months. The entire city was divided into three districts, and by a process of elimination the winning teams were narrowed down to two in each class. The finals were held in the Twelfth Regiment Armory, the prizes being handsome trophies presented by Hon. Egerton L. Winthrop, Jr., president of the Board of Education, and City Superintendent William H. Maxwell. During the progress of the series each team played one game on the home court and one on the visitor's court. If a tie resulted, a neutral court was selected. The meetings so arranged brought the young men of different parts of the city into generous competition, and, while in many cases spirited rivalry resulted, the general tendency was to break down racial and class differences, and thus to make the young men better citizens of our cosmopolitan city.

The general athletic activities were brought to a successful close by a very enthusiastic athletic meet held at the Seventy-first Regiment Armory. Because of the very large number of young men who desired to compete, it was necessary to limit the number of entries in each event to three from each center. Strict rules of eligibility were also drawn so as to prevent any members of high-school, college, or outside athletic teams from competing. Principals were urged to limit their competitors to those who had been bona-fide members of the centers, and thus to keep out any who had not a clear right to compete. These efforts resulted in excluding some expert athletes who would not have been desirable competitors, and served to divide the prizes among the representatives of many different centers.

Suitable trophies for the center obtaining the highest number of points and for the centers winning the senior and junior relay races were offered by prominent citizens. A large and enthusiastic assemblage cheered the competitors, and the various cries and songs of the "rooters" rivaled those of a college gathering. Very favorable press comments were given, and many visitors pronounced the meet the most successful in the history of the recreation centers.

Game and library room.—This room should be made the most attractive in the center. It should therefore be well illuminated, and the chairs and tables provided should be well adapted for the young men and women who attend. During the past winter efforts at decorating the rooms have been begun, and very fair success has been attained. As a rule the game room is near the entrance, and it should therefore be made

a place of real attraction, so that those who enter will feel that they are cordially welcome to the center.

The tables hitherto furnished have not been entirely satisfactory and have not always been strong enough to withstand the continued usage. During the coming season, however, we are to have a number of very substantial tables which have been made in the Vocational School for Boys. They have been made especially strong and are admirably adapted for the game room. In the tops of the tables checker boards have been made of inlaid squares. This plan will save much time in distributing the game most used in the centers. The fact that the Vocational School can co-operate with a separate branch of the school system will make strong friends for the former among the attendants at recreation centers.

The teachers endeavor to persuade those who attend to learn new games, and not to be content with playing the simpler card games, such as "Authors" and "Battles," in which there is an element of chance predominating. Much valuable information has come to the players from the geographical and historical games provided. While checkers continues to be the most popular game, many have been led by the teachers to learn chess. In one of our centers, the chess team won a tournament from one of the high schools, and also played a draw series with the chess team from the New York University.

Every center is provided with fifty books from the New York Public Library. The titles include fiction, history, travel, poetry, and general literature, the books being changed frequently. There has been a great improvement in the literary standards of the men and women attending the centers. The issues of current magazines are also kept on file, and attract many readers.

Mixed dancing classes.—During the past season, dancing classes were successfully organized in a number of the centers. The classes met once a week in the centers for girls and women, and the attendance of the young men was largely limited to those who were accredited club members of some neighboring male center. The principal of the latter signed a card setting forth that the applicant was a reliable and regular club member. The woman principal in charge of the center in which the mixed dancing class met became the final judge as to the desirability of the applicant.

The principals were most careful and discreet in their supervision

of the classes, and there was no effort to aim at large numbers. The members of the classes were made to realize that all should co-operate to make the classes so proper in every way that no act of any member could be criticized. There was a gratifying improvement in the general appearance of the young men. The association with the young ladies not only developed a higher social tone, but also led the young men to be very careful about clean collars, neat neckties, polished shoes, and everything that pertains to correct personal appearance. Definite attempts were made at instruction in dancing. The first part of the evening was devoted to lessons to beginners, then a period of instruction for all, and the last period was devoted to general dancing. The young men were allowed to attend only one dancing class a week, so that they could still have time to attend their club meetings, and also benefit by the systematic physical training of the gymnasium.

The principals and social workers confidently look upon these classes as furnishing the correct antidote to the evils resulting from the dance halls in congested districts, so often run in connection with the lower order of liquor saloons. In this connection the following words of Mayor William J. Gaynor will bear repetition: "All young people want to dance. It is a perfectly wholesome desire. The boys and girls of today want to dance—and mark my words—they will dance. Therefore, it becomes the duty of every city to see that its young people dance in the right place. The gymnasiums of public-school buildings are a safe place."

Study rooms.—In connection with most of our centers, study rooms have been established. The attendance has been large, so great, in fact, that in some quarters we were hardly able to take care of all who applied. The children who have no proper places in which to study at home flock to the well-lighted study room, where comfortable seats and desks, and the guidance of an experienced teacher, serve to help the children prepare their lessons under proper surroundings.

The results derived from these rooms are potent factors in tending to reduce retardation, for most of the pupils who use the study rooms succeed in being promoted. In one school, out of the two hundred who attended the study rooms all but one were promoted at the end of the term. In some of the schools we have two teachers, thus enabling the principals to make a better grading of the pupils, the older ones being placed in one room and the younger ones in another. Some of the higher

pupils have been of great assistance in giving aid to the pupils of the lower grades, and have been able to improve themselves on account of the review work thus occasioned.

These rooms are not simply intended to furnish places where children can prepare their written lessons. The effort has been to make the name "study room" of real significance. Insistence has therefore been laid upon a quiet discipline, and no more inspiring sight can be witnessed than to see forty, fifty, and sometimes more pupils studying their history, geography, or grammar, or preparing other lessons assigned. Reference books are consulted, an occasional question is asked of the teacher, pen or paper borrowed, and all amid an atmosphere which makes for mental growth and, what is more important, develops the study habit.

SUGGESTIONS FOR FURTHER DEVELOPMENT

1. All new school buildings should have the first (ground) floor constructed with high ceilings, so that the indoor yard or playground may be properly equipped as a gymnasium at night.

2. It is necessary that adequate electric lighting be provided, especially in the game and library room. The entire center should be as well illuminated as a theater, saloon, or moving-picture show. It will thereby prove cheerful and attractive to visitors.

3. Mixed dancing classes are to be encouraged, but they must be carefully supervised so that both sexes may realize that the privilege is one that will be withdrawn from any person found to be unworthy.

4. In connection with the centers, one of the kindergarten rooms should be used at night as a "Mothers' Room." Here upon two or three nights of the week the mothers should gather to receive from a trained nurse full instructions regarding the proper care of babies, nursing, bathing, clothing, and such other topics as concern the care of infants.

5. The auditorium should be located on or below the street level, and be provided with movable furniture, to permit dancing, drills, pageants, and athletic exercises.

6. The auditorium platform should be sufficiently elevated that it may be used for little plays. An inexpensive curtain would be a great aid to the simple dramatic performances which may be attempted by the clubs.

7. The waste place in the cellar should be utilized for the installation of bowling alleys. Besides the area necessary for the heating and electric plant, there is ample room in large buildings for two, and in some cases for four alleys. These can be used by clubs attending the centers. The

expense of the equipment will add less than one-half of one per cent to the first cost of the building.

8. One side of the playground should be boarded, so as to provide proper space for hand-ball courts.

9. In connection with the clubs, the cooking-rooms of the day school should be used Friday and Saturday nights by mothers who should receive instruction in plain cooking, bread making, and simple dietary preparations.

10. Sewing clubs should also be organized for women who will not attend the regular instruction of the evening schools. Once or twice a week a practical teacher or dressmaker should give lessons in darning, patching, renovating old garments, and the making of simple articles of clothing.

11. In the less congested portions of the city, where it is not advisable to establish regular recreation centers, use can be made of some of the vacant rooms. These should not be installed with school furniture, but should be left for club purposes. The young men of the neighborhood should be permitted to use these rooms at night, and to instal at their own expense pool and billiard tables. Another room can be used as a game and library room. Such a plan would require only the services of one teacher, and a hundred or more young men would thus be kept from evil influences at night.

12. Where possible, larger opportunity should be afforded for the development of glee clubs and choral singing. In every school there is a piano, and by furnishing an enthusiastic teacher much can be done to instil a love for good music among our young men and women. No single activity can be conducted at such small expense and give more pleasure and profit to so many people.

13. Evening recreation centers should be furnished with baths, so that after the vigorous physical exercise there may be a chance to take a cool shower bath before venturing out into the night air. This is especially essential for the men and boys who take violent physical exercise, or who play such games as basket- and hand-ball. The main cost is the initial expense of installation. As the centers are usually located in the poor sections of the city, the shower baths are of great hygienic value, as many of the apartments are unprovided with proper bath accommodations.

14. In better neighborhoods, upon one or two evenings per month,

there should meet a "Fathers' Club," devoted to the discussion of civic, industrial, and social topics, and especially to the great American problem of how to bring up a boy in a great city. There will also be an opportunity to have explained the value of school report cards, and the scale of ratings adopted by the teachers of the day school. In some neighborhoods the above is well taken care of at regular parents' meetings conducted by the day-school principal.

15. Once a week in the auditorium or assembly hall there should be an exhibition of moving pictures. The topics illustrated should be educational in character, including manufactures, agriculture, transportation, history, geography, art, and literature.

16. It is very necessary that measures be taken to continue the work of social and recreation centers throughout the whole year. In most cities the work is abandoned from May to October. During the summer period the clubs disintegrate, and it is a long time before reorganization is effected in the fall. A further danger is that dance halls, pool rooms, and such places, which are always open, will attract the young people, encourage evil habits, and make it very difficult to get them back to the centers.

17. There is also to be desired a gradual extension of the use of the school auditoriums for the discussion of municipal problems. Matters of budget appropriations, railroad franchises, new high schools, proposed bridges, and the like, should be fully discussed, not only in the editorial columns of the papers as now, but also in open meetings held in the large auditoriums of our public schools.

In conclusion, may I say that the needs of sensible and practical economy demand a larger use of our public-school buildings than the usual plan of only using them for five hours a day and for five days a week. One of the chief property assets of every city is found in the public schools. Not to make ample use of this valuable possession is unbusiness-like and un-American. It is especially necessary because our young people should not only learn lessons of scholarship, but also lessons of real life. The natural desire of the young people to play must be encouraged, and their active interest secured in all public improvements.

I commend to all the excellent advice of President William H. Taft, as set forth in a recent address: "It is in their idle moments that the young contract the habits that lead them downward, and it is in their leisure that they can make their character what it ought to be."

VI. THE ROCHESTER CIVIC AND SOCIAL CENTERS¹

EDWARD J. WARD

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On February 15, 1907, delegates from eleven organizations, representing more than fifty thousand citizens of Rochester, met in the Chamber of Commerce and organized the School Extension Committee. One of the leading spirits in this body was Mr. Howard Bradstreet, who has done much for the playground movement in Rochester. He is now continuing his good service in New York City. The committee asked for and secured an appropriation of five thousand dollars, to be used in maintaining one playground and one vacation school, and to make a beginning of social-center work. It also gained the consent of the Board of Education to administer the funds.

On November 1, 1907, School No. 14, which is equipped with a gymnasium, shower baths, a library, magazines, stereopticon lantern, etc., was opened as the social center of the community. The week was divided so that the men and boys had the use of the building on three evenings, and the women and girls on two evenings. One evening was devoted to a general gathering for a lecture or entertainment, followed by a social hour for all. Directors were appointed to take charge of the men's and women's gymnasium work, the library, the boys' and girls' clubs. An assistant to the regular day-school janitor was engaged to do janitor work. Within a month after the opening of the center, clubs had been formed of men, women, boys, and girls—self-governing clubs meeting once each week and devoting themselves not only to the usual parliamentary business of a club, but especially to the development of an intelligent public spirit by the open presentation and free discussion of public questions. Before the end of the year, in addition to School No. 14, four other schools opened their

¹ Reprinted with permission from the *Proceedings of the Playground Association of America*, III, 387-95 (January, 1910). Mr. Ward was to prepare a paper especially for this yearbook, in which he planned to discuss his Rochester and Wisconsin work, but was prevented by illness from doing so.—EDITOR.

doors to social-center work—two for men's civic club meetings and two for boys' clubs, or "Coming Civic Clubs."

At the end of the first season about seventy-five men frequenting Social Center No. 14 signed the following letter:

To the Honorable, the Mayor and Common Council of the City of Rochester, N.Y.:

Knowing that the question of extending the social-center work of the public schools is now before you and believing that the judgment of the men who have frequented the Social Center at School No. 14 may be of value in this matter, we, the undersigned voters, residing in the neighborhood of School No. 14, and members of the Men's Civic Club of the Social Center, declare that in our judgment the opening of the public school in the evening for recreation, reading, and club meetings, so far as it has been tried at School No. 14, is an unqualified success.

Not only does it give opportunity for wholesome athletic exercise, literary culture, and training in good citizenship to the older boys and girls, and the young men and women of the community; and in its free lectures afford opportunities for entertainment and instruction to all the people: but especially in its clubs for men and women it is of great value as a place for the discussion and understanding of civic questions and the development of a good community spirit.

In our opinion there could be no more wise and economical investment of the city's money than in the extension of the social-center movement; and we do most heartily endorse the recommendations of the Board of Education in this matter.

The experiment for the first year was regarded as being so successful as to warrant doubling the appropriation for the second year. In addition to Social Center No. 14, two other school buildings—the West High School and School No. 9—located in widely separated sections of the city, were opened as community gathering places. The arrangement regarding time, equipment, and direction for the second year was practically the same as that made for the first year. During the second year, in addition to the men's civic clubs that had been formed during the previous year and those which were formed in the newly opened centers, a number of others were organized in various sections of the city. They represented every class of people and practically every interest in Rochester. In the middle of the second year these clubs formed themselves into a League. The reasons for organization and the purpose of the League may be taken from the preamble to its constitution:

The steady growth of the civic movement from its beginning in December, 1907, when there was one club with twelve members, to the present, when there are sixteen clubs with fifteen hundred members, seems to justify the belief that there is a permanent, real need of non-partisan organizations of adult citizens, meeting in the public-school buildings for the purpose of developing intelligent public spirit by the open presentation and free discussion of matters of common interest; and that the civic clubs meet that need.

To increase the effectiveness of the civic clubs and to further their purpose—especially in matters such as the securing and entertaining of distinguished visitors to the city, in giving unity to the expression through the various civic clubs of the people's will in the matter of desired legislation, and in guiding the further extension of the civic-club movement with a view to the welfare of the city as a whole—it is desirable to form a central league of federation of these civic clubs.

We, the chosen representatives and delegates of the several civic clubs of the City of Rochester, do hereby form such a League of Federation.

On April 8, 1909, Governor Hughes accepted the invitation of the league to visit the social centers and civic clubs, to dine with the officers, and to address the members of the various organizations. During the course of his address he said:

You in Rochester are meeting one of the great tests of our democratic life. You are proving that the virtues of humanity far exceed in force the vices of humanity. You are showing that it is health that is really contagious, and that in a progressive community the most intelligent of the citizens turn their attention to the thought of mutual improvement and of enlarging the area of the real opportunities of life. . . . It is in the social centers of Rochester that I should look for an answer to the question whether in a great democratic community you are realizing the purposes of society.

I have enjoyed seeing the splendid provision that is made through this movement for the promotion of physical well-being. How little we realize that character must have its basis in self-respect, and that it takes a good deal of a saint to have self-respect when one is not well and vigorous! I rejoice that boys and girls, and men and women are having an opportunity to lead normal lives, and to get the sound physical basis upon which everything else in life so largely depends.

I congratulate you upon the use that is made of the fine public buildings that have been erected for educational purposes. . . . We used to pass these stately edifices of education after school hours and found them closed and dark—interesting only because of the architectural beauty or curiosity of their façades. Now I do not know when the janitors find time to clean

the public-school buildings of Rochester. [Vaccum-cleaning plants are being installed in the new school buildings of Rochester.] It seems to me that they are being used all the time. This use of the school building is a school-extension proposition: what the community has paid for is now enriching the community in larger ways than were at first thought possible.

But you have not stopped there, and I am glad of that. You are organized in civic clubs, you have federated these clubs, and you are discussing public questions. We cannot have too much of that. . . . We have nothing to fear in this country if we can only have enough of that; the danger is in having too little.

The second season of the social centers, like the first, was most successful. The appropriation for the third year, that is \$22,000, was an increase of more than 100 per cent over the amount appropriated for the second year.

A detailed statement of all the activities of the social centers would mean a repetition of *The Story of the First Two Years*, a book of one hundred and twenty-four pages published by the League of Civic Clubs. It will be well, however, to speak of one or two of the great problems whose solution can be found along the line of this development, if we may judge from the beginnings that have been made.

One of these is the immigration problem—the great question of how to receive and assimilate the foreigners. At a public meeting of the first Italian Men's Civic Club, one of the members spoke of the service of the social centers in these terms:

When you meet the Italian half way, as you do in the social centers, recognizing that he as an Italian has something to bring, something to contribute to the common store; when you teach him to love and honor the American flag and all that it stands for to him; when you make him feel friendly—you make him feel that he is a man, and that he must be worthy of his larger citizenship.

The immensely important problem of furnishing wholesome opportunities for young men and women to meet and become acquainted finds a satisfactory solution in the opening of the social centers, in the custom of allowing the boys' clubs to entertain the girls' clubs, and especially in the practice of having a general social gathering each week.

The problem of the home, which is second to none in importance, finds a partial solution in the opening of the social centers. The social

center gives an opportunity for the whole family to find its outside recreation in the same place.

The equally important problem of civic improvement and real democracy also finds its solution here. It was at the organization meeting of one of the men's civic clubs that the alderman of the ward said:

The value of a civic club from the point of view of the private citizen has been stated. I want to say a word in regard to its value from the point of view of the public servant. An alderman is elected to represent the people, but how can he represent the people unless he knows what the people want? And how shall he know what the people want unless they tell him? I welcome the civic club because it will give me an opportunity to learn the will of the people in this neighborhood.

Finally the social center meets directly and effectively the problem of the boy at the most difficult and critical period. It was soon after the opening of the social center at School No. 14 that the director was stopped on the street by a merchant whose place of business is near by. The merchant said:

The social center has accomplished what I had regarded as impossible. I have been here nine years and during that time there has always been a gang of toughs around these corners, making a continual nuisance. This winter the gang has disappeared.

"They are no longer a gang," answered the director, "they are a debating club."

In closing permit me to quote some verses entitled, "What Social Center Means," which were written by a young man of one of the social centers. They are to be sung to the tune of "Auld Lang Syne." We may criticize the construction of the verses, but cannot deny that, coming from a member of the social center, they have real meaning:

WHAT SOCIAL CENTER MEANS

I. ALL

Did you ever stop to figure out
What "social center" means?
Here you will find democracy,
Men—kings, and women—queens.

Here each one can express his thought.
All stand on equal ground;
Here diff'rences are all forgot,
Here brotherhood is found.

2. BOYS

We boys, who used to waste our time
On corners of the street,
Now turn our back on loafing:
We've a better place to meet—
A place where we can build ourselves,
Our body and our mind;
And we will surely "make good" here.
The center pays, you'll find.

3. GIRLS

We girls, who used to pose in front
Of mirrors half a day,
Now have the roses in our cheeks;
Our powder's thrown away.
We know that brains are more than hats,
That heads are more than hair;
We're here because we mean to be
Useful, as well as fair.

4. MEN

We men here meet without constraint
Real questions to decide;
To face the common enemy
We stand here side by side.
Old prejudice is on the run;
Injustice, too, shall go.
Why Rochester should not be right
To us you'll have to show.

5. WOMEN

We women count as human here,
We've head as well as heart.
In solving civic problems we
Have come to do our part.

For the ideals of the home
Expression we shall find
In cleaner, happier city life,
More beautiful and kind.

6. ALL

And so we've told you what to us
The social center means.
Here you will find democracy,
Men—kings, and women—queens.
Here each one can express his thought.
All stand on equal ground,
Here diff'rences are all forgot,
Here brotherhood is found.

VII. HOME AND SCHOOL ASSOCIATIONS

MARY V. GRICE

President Home and School League, Philadelphia

A new force is being recognized today in the educational world—a force elusive, vague, not yet harnessed by the thongs and cords of organization, but none the less a force that is being reckoned with. It is the newly expressed impulse of the home that in turning its sometime indifferent gaze upon the school and reaching out toward the same in the spirit of co-operation has quickened into activity a latent power. This power is permeating strata after strata of social life. It takes on different forms in different places, but its key-word is the same wherever its outward and visible expression is seen—and that is “together”—the working together of the two great formative forces in the life of the child.

This movement began in the early days of the kindergarten. It was so perfectly natural for the mother to follow her very little child into the school that soon her presence became an accepted part of all school functions, indeed of most of the school hours. Gradually the circle of co-operative interest widened until it spread through the higher schools, while it is even manifesting itself in many Sunday schools, indicating that the principle of co-operation obtains wherever the best interests of the child are to be furthered.

By way of suggesting the extent of the movement in our own country we would quote from the office records of the Home and School League in Philadelphia for the month of November, 1910: “Forty-five cities have communicated with this office during the past month relative to the formation and method of conducting Home and School Associations.” There are few school communities today that are not at least discussing the subject, even though by reason of misapprehension on the part of the authorities, or by indifference or fear of extra burden on the part of the teachers it has not yet been accepted as an educational factor to be used as an uplift in community life.

The character of the work is purely that of social service. It must

be commenced and carried forward in the spirit of love—love that never patronizes, that never “goes down” but simply “goes along.” With such a spirit the movement is limitless in its possibilities for service.

The methods employed in carrying on these associations vary with the needs and conditions of the community, but the factor that seems imperative to the staying quality of the movement is that it *should come from the people themselves*, not be foisted upon them either by board of education or faculty of school. Yet he is a wise leader who, whether from the ranks of the profession or the laity, whether official or private citizen, can make the people realize the power gained through such organized effort.

One of the best methods of arousing public sentiment in this movement is to form a Central Committee of Citizens—educators, professional men, prominent women—who are willing to back the work both by moral support and financial aid. Let this Central Committee enlist the sympathy of the school board and teachers. (Be sure of the co-operation of the teachers. Wait, if need be, until they are converted. Their influence is essential to success.)

The committee should then organize a Bureau of Speakers—men and women of influence in the community—who will give at least one talk in a season upon some subject pertaining to the child’s welfare.

Finally, send invitations not only to every home represented in any particular school, but to all homes in the community—whether they have children or not in the school—aiming to have the volunteers assume the conduct of the meeting under the advice and co-operation of the teachers. All meetings should be held in the school buildings.

Having gathered together an audience as suggested above, present the value of community work as a power for community good, and you will find there are very few such occasions that will not result in the formation of a Home and School Association relating itself to the best interests of the school and its community.

When once the organization is formed its growth and development are along lines which suggest a natural law such as governs all organic life. Its first interest is in itself, just as completely as the interest of the very young child is self-centered. The organization is interested in its particular school, in the particular group of scholars connected with that school, in its particular needs, just as each father and mother are most deeply interested in the children of their own family circle. Naturally

the subjects discussed at first take on the coloring of the new interest. Those having the care of the children in the home meet with the caretakers and instructors of the school, and in seeking an answer to the age-old question—"What of the Child?"—are creating almost unconsciously a new educational force. Through these meetings and conferences men and women who have never before given the subject thought are beginning to realize in some degree the purpose and method of the school and its trained workers. School policy and discipline are discussed and the child's new relation to community life made clear.

It is not long before a second stage of development is reached. Those in the home are not content to be directed along the line of effort that relates to the school only. They desire to know more of the great underlying laws that govern child nature so that they in turn may be better fitted to carry on their share of the work in the home. Fundamental ethical problems come to the front at this point, questions not now of school policy but of character building, upon which both home and school must agree in order to obtain desired results. And so without apparent planning the homes about the school are being stimulated and enlightened and lifted up to a higher plane of endeavor.

Then comes the third widening of the circle. Not "our school" so much, nor even our "homes," but the community's interest is the thing dear to the heart of this organization. "Not the one for the many but all for each" becomes the slogan, and a new interpretation of Democracy begins to dawn upon the minds of the members. The horizon of interest is easily pushed back at this point. The simple organization of the home and school forces has become more all-embracing. The great world movements press in, and thus the little groups connected in this way with the schools all over the country find themselves in turn a part of the world and its concerns. Is it not easy to see what a splendid educational factor this movement may be made?

One of the interesting phases of the work is the active participation in it of bodies already organized. Associations for furthering public education, patriotic societies, women's clubs, neighborhood workers' associations, and many others are affiliating with this movement in different cities and forming a vast army of men and women all working for a common cause.

The results are what might be expected. Wherever home and school organizations have been formed they have contributed to the advance-

ment of the educational and social interests of the community. Quoting from an editorial in the *Philadelphia Ledger* following the Annual Conference of the Home and School League this past fall we find this thought emphasized:

The League's work has hardly begun in Philadelphia, yet no organization has been of greater beneficence in its direct and indirect results upon the schools themselves and upon the community than the work now being done by it. It is serving as an auxiliary to the Property Committee of the Board of Education in supplying bookcases, pianos, classroom decorations, trees for school grounds, material and equipment for extra classes which could not have been opened had they been compelled to wait to be supplied from the regular official sources, the equipment of playgrounds, and in many other ways contributing to the physical well-being of the schools. Besides these concrete benefits the movement is proving its usefulness as an aid to the school authorities in pressing their needs upon the municipality; it has in many instances given material aid to the Superintendents in providing books for the instruction of mothers in matters of sanitation and hygiene, lectures and entertainments for pupils and their parents, the organization of mothers' circles, and in making it possible for teachers to take advanced courses of instruction at the University of Pennsylvania Summer School. More important than any of these it has brought the public into closer relationship with the schools by the organization of social centers and the opening of the buildings for evening meetings and classes. In several schools classes for dancing, games, instruction in sewing and embroidery, in reading and dramatic recitation, in handicraft of various sorts, housework and home-making, physical training, etc., have been successfully conducted, and several neighborhood savings banks have been opened. All this could have been obtained in no other way than by the helpful co-operation of the public.

Within the past year in this one city alone nearly two hundred thousand people have gathered in the different school buildings from time to time after school hours, to say nothing of some twenty-seven thousand young people and children meeting in the social centers for various forms of recreational instruction.

It might be well while reviewing this movement to mention some of the difficulties one is bound to encounter, or the criticisms that are sure to arise in the working-out of any problem as great as the bringing together of two such widely separated institutions. One of the hardest difficulties to overcome in the beginning was the indifference on the part of the home. The urgent plea of a growing daughter, who had heard

her mother accept an invitation to attend a meeting in the school, voices the attitude a few years back—"Oh! Mother, please don't go. No one ever goes to the school *unless there is a fuss on.*" Today that attitude has changed. The home is eagerly knocking at the doors of the school, asking to come in and share with the trained teacher some of his knowledge concerning the child. This is not true of all homes, nor can it be said of any movement that it is ever accepted by all the people. The greatest difficulty to be overcome at present is to be met among the teaching body itself. With a system of education so overcrowded with that which has to be done "by the book" there is little time or energy left for the initiative required in the new field of Social Education. Yet so loud are the demands of the age for the service of brotherhood, so great are its claims, that despite their overburdened days many teachers are rising to this opportunity and responding with the gift of themselves to the needs of their neighborhoods. Such teachers are making a communal force of the school, and are relating it in ways unthought of before to the life of the people.

It is easy enough in the flush of enthusiasm of a new venture to effect an organization, but to carry on a sustained effort year after year requires tact and patience and hard work. There never has been, and probably never will be, anything that was worth doing that did not present difficulties that had to be met and overcome all along the way.

There are organizations that are making a study of the preparation of programs for home and school meetings, and for those who find it difficult to carry on that part of the work it is easy to secure assistance.

The criticism that those who need it most never come to the school can be met by Charles Dudley Warner's suggestion in *Back Log Studies*: "If you want a good fire *light it on top.*" The fire of community interest will burn through from top to bottom if only once it is lighted.

The criticism that this freer use of our school buildings subjects them to that much more wear and tear, which in turn necessitates added expense, can be met as was the teacher's remark when she said, "Look at these newly painted walls, and my unscratched desks; why, if the young people come in here of evenings the room will never be so nice again." The reply, "Yes, you are right, the room will never be 'so nice' again. It is all a case of relative values. Which would you rather have, unscratched desks or unscratched characters?"

It is hard to foresee just how great the educational value of this move-

ment may become in the future, it stands today big with promise. It is helping to make of the schoolhouses centers of light and usefulness, the influence of which cannot be computed by commercial standards, for the spirit of good citizenship radiating from each of these centers cannot be weighed nor measured, but the whole social structure will be the richer thereby.

VIII. THE COMMUNITY-USED SCHOOL

CLARENCE ARTHUR PERRY
Russell Sage Foundation, New York City

Public School No. 9 of Rochester, New York, besides affording the regular elementary day instruction, is used also as an evening school for foreigners in the winter and a vacation school in the summer. Its yard is a public playground, not only during July and August, but after class hours throughout the year, while in the building itself is provided a place for the utensils and athletic paraphernalia needed in the games and sports. The large room of the school is both an assembly hall and a gymnasium. Here, in the margin of the day, are held public lectures, free literary entertainments, amateur theatricals, concerts, mass meetings, and moving-picture shows. When the chairs are removed it is given over to numerous dances, basket-ball games, athletic exhibitions, and other social doings. These occasions do not occur spasmodically and infrequently: they come according to an annual program which is both full and choice. They are provided by the city and enjoyed by the public without discrimination.

The class and kindergarten rooms serve by night and Sunday afternoons as places for reading both books and periodicals, playing quiet games, and rehearsing orchestral and glee music. There is no fee attached to these privileges and the people of the neighborhood make a liberal use of them. Thriving civic clubs—four separate organizations for men, women, young women, and youths—also have quarters in the building while free classes of both sexes rotate in the use of the gymnasium, which is well equipped with apparatus and shower-baths, and manned with a staff of competent specialists. Such, briefly, are the main features of what is probably one of the best examples of a community-used school in this country, or indeed, in the world.

There are fortunately many other American schools which afford these privileges in varying degrees. As in the case of this Rochester school they supplement the regular day instruction with activities which enrich the lives of grown-ups as well as children and thus serve more adequately the communities in which they are located. This larger

use of school property not only affects the community; it develops the school as well. First let us consider the effects upon the community. These, for the sake of clearness, may be grouped under three heads: public health, civic efficiency, and social solidarity.

I. PUBLIC HEALTH

Perhaps the most obvious way in which the wider use of school property contributes to the physical well-being of the community is found in the increased opportunities for play and enjoyable hand occupations afforded by vacation classes and yard games and sports. Jumping, calisthenics, basket-ball, and dancing give not only immediate benefits but also permanent ones, since they foster athletic habits. But for the shower-bath, first taken at the playground or in the school gymnasium, many people would probably never acquire the custom of daily bathing. The art of swimming which is included in many playground and recreation-center programs is not only a valuable physical exercise but an accomplishment of prime importance in certain emergencies. The chinning, jumping, and running events which constitute the badge tests and class athletics now carried on in many schools give bodily strength and inculcate, at the same time, notions of the simplicity, cheapness, and effectiveness of the elemental, really necessary things of life. Folk-dancing, especially, represents the maximum of benefit with the minimum of expense. Exhilarating, sociable, imparting grace, exercising all the muscles, quickening the important bodily functions, requiring small space per person, and economical of teaching material—its introduction has changed the aspect of life for thousands of city girls and it may be preparing heritages of rhythm and color for unborn generations.

The medical inspections given children at the playgrounds and the physical examinations held in the social-center gymnasiums affect beneficially not only the subjects themselves but indirectly their relations and friends, by setting higher standards of physical efficiency and by suggesting ways of discovering latent weaknesses. Of a similar value are the playground exercises specially prescribed for children with wry-neck, spinal curvature, and other deformities; the pure milk distributed and the day-nursery care afforded now in city-school yards during the hot months. A beginning which may have even more far-reaching effects upon the health of American school children is to be seen in the warm, nourishing lunches now furnished in some of the

schools of Houston, Texas, by the Mothers' Clubs of that city. Considerable loss of life is undoubtedly prevented through the mere withdrawal from the crowded city streets of large numbers of children through the attractions of the playground and vacation school. It is to be hoped also that drawing them out of the homes and leaving the housewives greater freedom for household duties results in cleaner rooms and more appetizing meals for the whole family. There can be no doubt, however, that both the training rules which surround participation in out- and indoor sports, and the custom of spending leisure time in social and evening recreation centers promote temperance in the use of stimulants on the part of young men. So much for the physical effects of the *practices* in community-used schools.

Concerning the health-giving instruction imparted in these centers an example is found in the results of an evening illustrated talk given in one of the Cleveland schools. It was entitled "How We May Aid the Fight Against Tuberculosis," and afterward the committee in charge received over forty letters from pupils telling of sanitary changes which had taken place in their homes. In Chicago the Visiting Nurses' Association carried on one summer a campaign of education through the vacation schools for the purpose of ameliorating the diarrheal diseases in young children. These schools also send out through the children a constant stream of information upon the best ways of cooking, preserving food, securing pure milk, and keeping the home clean. In many playgrounds babies are bathed by trained nurses in the presence of the mothers who are also given other instruction about the care of their infants.

Over one hundred of the lectures given annually by the Board of Education in New York come under the head of physiology and hygiene, while in the social centers and home and school meetings throughout the country a large part of the talks given are devoted to such topics as "The Care of Infants," "Pure Milk," "The Prevention of Contagious Diseases," "First-Aid Methods," and the advocacy of a bloodless Fourth of July. In the club meetings the mothers and wives not only discuss similar subjects but exchange recipes, learn how to clothe their girls properly and how to stop cigarette-smoking among their boys. Thus through thousands of channels opened by the wider use of school property is the wisdom of the physician and the scientist being conveyed into the homes of the inexpert and the susceptible.

II. CIVIC EFFICIENCY

In the work of rendering more effective and less wasteful those services for the whole community which it delegates to representatives, school extension can render valuable assistance. Citizens must be adequately informed before they can exercise "efficient citizenship." How organizations meeting in schoolrooms help civic progress is illustrated in Rochester where, at the second meeting of the pioneer Men's Civic Club, "The Duties of an Alderman" were discussed by a member of that body. In responding to a vote of thanks he said: "You have given me a vote of thanks. I feel that I want to give you a vote of thanks for the privilege of speaking to you and hearing your frank discussion of my words. If you have been benefited by my coming here, I have been benefited more. If every member of the Common Council and every other public servant had, frequently, such opportunities as this to discuss public matters with those to whom he owes his appointment it would mean that we would have much better, more intelligent representation of the people's interests and a cleaner government."¹

Some of the other topics discussed by the civic clubs in this city are: "The Duty of a Citizen to the City," "Idealism in Municipal Politics," "Why Vote for Taft?" "Democratic Policies," "Socialist Policies," and "Prohibition Policies." The reason for the success of these meetings given by a prominent schoolman who was visiting Rochester is as follows:

Yes, I see it. The foundation of this development in Rochester is the right of free discussion and democratic control. I have wondered why, in our city, although we have spent as much money and effort in having the schools used as Social Centers as you have, yet we haven't developed the same spirit. The reason is that the men haven't made use of the schools, and the men haven't made use of the schools because we have superimposed restrictions upon their discussion. It is strange to think that, in America, in the most essentially American of our institutions we have denied this right. Unquestionably the secret of the success of the Rochester movement is in the fact that it has not been un-American.²

And the men in these clubs do not limit themselves to mere talk. They have formed a league which works "for the city as a whole."

¹ Ward, *Rochester Social Centers and Civic Clubs*, pp. 29-30.

² *Fifty-fifth Report of Board of Education* (Rochester, N.Y.), p. 138.

They have been instrumental in securing playgrounds. Their agitation has brought about improvements in the streets and street-car service and the establishment of public comfort stations; and they have set the example of systematic action in opposition to unsatisfactory divisions of land by real-estate companies.

The civic effect of public lectures having such topics as these, selected from many on the New York Board of Education's program, is obvious: "Municipal Cleaning and Its Relation to Public Health," "Housing in Europe," "Factories, Tenements and the Sweating System," "Our New Water Supply," and "City Planning."

By way of preparing young people for community life the vacation schools render valuable service in teaching property rights to street gangs, curing juvenile delinquency, and affording backward pupils larger opportunities to secure promotion, privileges which may determine that they are to remain in school long enough to secure the civic education afforded in the last two years of the elementary course. The evening recreation centers yield not only the same sort of help to retarded pupils but through their clubs and debating societies the youths receive excellent parliamentary training and imbibe many facts about municipal affairs. Even the sports contribute to this end when they demonstrate in the conduct of some reclaimed tough that, as Miss Evangeline Whitney phrased it, "the athlete's code of honor is a triumph over lawlessness, the beginning of a citizen's conception of duty."

The kind of civic work done by the organizations which hold their meetings in schoolhouses is well illustrated by the activity of the Parent-Teachers Clubs of Auburn, New York, which, through a skilful agitation, secured a probation officer for the city, and also by that of the Parents' League, which offered prizes and held a neighborhood improvement contest in a suburb of Boston.

III. SOCIAL SOLIDARITY

Among the forces tending to fill in the fissures in our social life which have resulted from the prevailing industrial system and the immigration of uncongenial aliens may be mentioned the supervised playground, the evening recreation and social centers, and the basement or hall where folk-dancing is held. Playground workers frequently tell of race feuds which have either entirely disappeared or been converted into enthusiastic competitions through the effects of organized games

and sports. The peasant father acquires a different feeling toward Americans when his daughter dances his national dance before him and tells of the good times she has after school. The natives also feel a new respect for the poor foreigner when at some school festival they see him participating gracefully and joyously in an exhibition of the merry-making which had lightened the labors of his people for generations past.

The domestic-science training of summer schools and playgrounds imparts to thousands of immigrant homes a knowledge of American customs which subtly undermines that greatest barrier to racial intermingling—differences in manner of living. The club-life of the evening recreation centers works toward the same end in a different way. How effectively, no one has more adequately expressed than Mrs. Humphrey Ward who, after a visit to several New York centers, reported as follows:

In another we found a thousand girls, divided in the same way between active physical exercise and club meetings (by the way, while one of the boys' clubs was debating Mr. Bryce's *American Commonwealth*, the girls were discussing *Silas Marner*); and, in the third, perhaps most remarkable of all, five hundred girls were gathered debating whether you should retain the Philippine Islands, with a vigor, a fluency, a command of patriotic language and feeling which struck me with amazement. Here were girls, some of whom could only have arrived in your country a year or two ago, and all of them the children of aliens, appealing to your Anglo-Saxon forefathers, and talking of your Revolutionary War and the Monroe Doctrine, of liberty and self-government, with an intensity of personal appropriation such as no mere school teaching could have produced.¹

Adult foreigners are affected in similar ways by the privileges of school social centers.

When you meet the Italian half way [said a prominent naturalized citizen of Rochester] as you do in the Social Center, recognizing that he, as an Italian, has something to bring, something to contribute to the common store, then you teach him to love and honor the American Flag and all that it stands for to you, by showing some respect for his flag, and all that that stands for to him, then you make him feel friendly, you make him feel that he is a man, you make him feel that he must be worthy of his larger citizenship.²

In a different way, by the fusing effect of experiencing a common emotion, the social center exerts an amalgamative influence upon the

¹ *Tenth Annual Report of the City Superintendent of Schools* (New York City), p. 523.

² Ward, *Rochester Social Centers and Civic Clubs*, p. 90.

community which is needed by natives quite as much as by immigrants. Rev. Samuel McChord Crothers gave an instance of it when he said:

Not since Civil War days have I heard people sing with such spirit. The one justification of war is that it makes people realize that they have a common bond, a common interest—and they express that feeling in songs. You people of Rochester, in the Social Centers, have made the same discovery of a common bond. You prove it by the spirit of your singing. You have done a great thing. You have found a substitute for the only good thing about war, so that war is no longer necessary.¹

How the school lectures aid in the assimilation of the alien is well illustrated in New York where provision is made for several of the races which are here in large numbers. The Italians hear in their own tongue a discourse upon the "Rights and Duties of an American Citizen." A Hebrew tells his neighbors about "Great American Literary Men," while the Germans listen to their compatriots expatiate upon musical celebrities. For the more recent immigrants there are lectures which are so fully illustrated with pictures and demonstrations that they are to a large degree understandable without much knowledge of English.

Again the public lecture exerts a needed cohesive force upon all who come within its range. The reason is well stated by Superintendent A. B. Poland of Newark:

The school building is the common forum where men and women of all social and intellectual grades meet on a level, as nowhere else—certainly not in houses of worship, since there they are necessarily divided into separate and distinct communions. Scarcely another place, except it be the polling place, can men of all classes meet on a common basis of citizenship; and even at the polls men are usually divided into hostile camps. Anything that draws men together on a common footing of rights, powers, duties, and enjoyments is a great social and moral power for good citizenship. Next to the public school, which tends to obliterate hereditary and acquired social and class distinctions, the public lecture held in the public schoolhouse and paid for out of the public purse is the most thoroughly democratic of our public institutions.²

IV. REACTION OF COMMUNITY-USE UPON THE SCHOOL SYSTEM

The president of the Pittsburgh Playground Association reports that as a result of its vacation-school work, industrial and domestic-science departments have been placed in a number of the day schools.

¹ *Fifty-fifth Report of Board of Education* (Rochester, N.Y.), p. 145.

² *Fifty-first Annual Report of Board of Education* (Newark, N.J.), p. 177.

In others play has been given a place on the regular daily program and many teachers have learned how to play with their children. Teachers commonly state that the pupils who have enjoyed summer-school and playground privileges return to their classes in the fall in a less demoralized condition and settle down to work with less friction and trouble.

The success of the summer-school activities is undoubtedly responsible for the tendency now noticeable in many places to extend the period of the regular day instruction. Cleveland has been so successful in running the new Technical High School twelve months in the year that plans are now being made to place the elementary instruction on that basis, and the idea has attracted attention in other cities. In Oakland, California, some of the schools have been opened Saturday mornings to allow instruction in domestic science and manual training. In New York, Newark, and several other cities the children are allowed to hold games and folk-dances after hours in classrooms and basements.

Concerning the effects of systematic athletics and play upon school work Mr. Lee F. Hanmer has written as follows: "In cities where this work has been organized and given a fair test school authorities are practically unanimous that (1) class work is better; (2) the health of the school children is improved; (3) a wholesome school spirit is developed; (4) there is less trouble about discipline owing to the closer relation and better understanding between the pupils and teachers."¹

The organization of home and school associations in connection with the larger schools created a demand for a meeting-place in the building more suitable than the ordinary classroom. The principals also wished a place where the whole school could assemble and the consequence has been that in many cities all plans for new elementary schools now provide for a spacious auditorium. Thus the building becomes better adapted not only for community-use but also for developing a healthy school spirit. Without a common meeting place the only other agency for creating this feeling is to be found in athletics, a very effective one, to be sure, but one that does not develop exactly the same kind of spirit that springs from a debate, an inspiring lecture, or a public exhibition of scholastic ability.

One of the arguments used in a recent successful campaign waged by the Civic League of Lexington, Kentucky, for the purpose of raising

¹ Hanmer, *Athletics in the Public Schools* (p. 11), Russell Sage Foundation Pamphlet.

funds with which to build a new model schoolhouse was the accommodation which would be made "for various social uses." Their appeal, speaking of the large room which could be used as kindergarten, gymnasium, or auditorium, said:

With the stage at the end and folding chairs it may be converted into an auditorium for stereopticon lectures, musical entertainments, and plays. When the school buildings belonging to the people are used by the people as their clubhouses, where recreation, physical activity, and educative amusement may be had by the young in proper environment the saloon evil and other social evils will not cut so large a figure in our civilization.

But besides this direct way in which community-use is securing better school facilities for the children there is a constant improvement in educational methods through the better understanding of the teacher's aims and problems which the parent has gained by being brought into the school building. The citizen, thus enlightened, in his capacity of taxpayer strengthens the schoolman's work with appropriations, and as parent gives him more effective co-operation in the home.

Finally, the forces which are rapidly transforming public schools into focuses of community life are genuine human needs, some elemental, others created by an unprecedented gregariousness, but all compelling satisfaction if the advance of the race toward its destiny is to be unimpeded. The matter has been well stated by Dr. Luther Halsey Gulick in these words:

Only upon the basis of personal understanding and mutual confidence is efficient and coherent social action possible. This is the foundation of democracy. Communities must have, therefore, material and social machinery by which various classes shall come to know each other; some instrument that shall cross-section racial, financial and social strata; something that shall go beneath these and touch fundamental human interests. Of these the central one is the love of children, and the machinery most natural, as well as most available, is the public-school system.¹

¹ Introduction to Perry, *Wider Use of the School Plant*, p. vii.

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"Every principal was granted by the Board of Education the right to use the school building for the work [of the Home and School associations]."

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THE TENTH YEARBOOK

OF THE

NATIONAL SOCIETY FOR THE STUDY OF EDUCATION

PART II

THE RURAL SCHOOL AS A COMMUNITY CENTER

BY

B. H. CROCHERON, MISS JESSIE FIELD, F. W. HOWE, E. C. BISHOP
A. B. GRAHAM, O. J. KERN, M. T. SCUDDER
B. M. DAVIS, *Editor*

THIS YEARBOOK WILL BE DISCUSSED AT THE MOBILE MEETING OF THE
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PREFACE

This yearbook is planned to include accounts of actual experiments that have been tried in making the school a community center, so that other communities may learn of the possibilities and difficulties of putting into practice what has already been achieved in some of the most advanced communities. At the National Education Association meeting for 1902 (p. 373 of *Proceedings*) John Dewey discussed very ably the theoretical aspects of the problem as requested, but said:

I do not feel that the philosophical aspect of the matter is the urgent or important one. The pressing thing, the significant thing, is really to make the school a social center; that is a matter of practice and not of theory. Just what to do in order to make the schoolhouse a center of full and adequate social service, to bring it completely into the current of social life—such are the matters I am sure which really deserve the attention of the public and occupy your own minds.

The contributors to this volume are specialists who have made conspicuous success in organizing the various phases of rural education and community activity which they discuss. They have described in a concrete way the extent and character of the work carried on under their direction, giving methods employed, results secured, concrete incidents, difficulties, criticisms, suggestions, and comparison with similar work in other communities.

The editor and secretary desire to express their appreciation of the work of the specialists who have provided the material, and of the assistance of others who co-operated in organizing the program, particularly Mr. D. J. Crosby of the United States Department of Agriculture.

Part I of the *Tenth Yearbook* supplements this volume with a similar discussion of "The City School as a Community Center."

I. THE RURAL SCHOOL AS A GENERAL EDUCATIONAL AND SOCIAL CENTER

A. COMMUNITY WORK IN THE AGRICULTURAL HIGH SCHOOL

B. H. CROCHERON

Principal of the Agricultural High School of Baltimore County, Philopolis, Md.

The methods of community work fitting specific places must be judged by individual conditions. A typical procedure is that of the Agricultural High School of Baltimore County, Maryland. This school has been in operation during but one school year, yet it has already carried on at least one type of work with each class of people in its neighborhood: farmers, farmers' wives, young people, rural school teachers, and children. As a result, the people are frankly and heartily interested in the school and already regard it as one of their best possessions.

The school is a small high school maintained by county school funds. It is thus an integral part of the school system of the county. It is located out in the open country, not adjacent to any town or village, but near a station of the railroad by which many of the high-school students come daily. Four elementary schools totaling ninety pupils were consolidated in two classes which meet in the high-school building. The high-school department had in the first year fifty students. School wagons and private conveyances bring many whose homes are not adjacent to the railroad. The school has seven acres of ground and a good granite building which has five classrooms, the two largest of which can be converted into a hall for meetings, seating three hundred. There are a manual-training room, a domestic-science room, an agricultural laboratory, a farm-machinery room, and toilet rooms in the basement. The school has its own heating, lighting, and water-supply system. It teaches all the usual high-school subjects except foreign languages, in place of which it offers agriculture, domestic science, and manual training. In short, the school resembles others over the country in its equipment and courses.

When the school started it was decided as a definite part of its policy that, for the fulfilment of its possibilities, educational facilities must be offered for every class of persons in the community: men, women, and

children. Before the school building was completed, a mailing list of persons in the county was made. The principal was new to the community; he knew no one. This list was to be his method of reaching all the folks. The list was compiled from subscription lists of county papers, poll lists of voters, memberships of farmers' clubs and granges, account books of physicians and lawyers, and other sources. When the list was made up into a cross-reference card index, a very valuable fund of information was obtainable about almost anyone of interest in the county. It was not only possible thus to have a list of all persons living on farms or interested in agriculture, but also to tell at a glance whether they were persons of prominence or not, and even what their politics were supposed to be. Subsequent information is added to these cards, such as whether they answered a letter of inquiry sent out by the school, whether they attended certain activities of the school, and so forth. Ultimately this list should be of enormous value, as it will show those persons who can or cannot be expected to respond. Even at present it is possible to condense the list considerably by discarding for some purposes those whose interest is apparently in another direction.

The first event was to be the dedication of the new building, the details of which were turned over to two farm clubs—one of men, the other of women. The men's club is known as the Junior Gunpowder Agricultural Club, the women's as the Women's Home Interest Club. Both are composed of some of the most intelligent and progressive persons in the community. The clubs have been of great benefit to the neighborhood, even though they are small and somewhat exclusive organizations. Through all the community work of the school the men and women of these clubs have been so actively participant as to be of great assistance. If there were no farm clubs in the neighborhood the school would organize them, because they are capable of so great assistance.

Three thousand personal invitations, the names obtained from the card index, were sent out from the school for the dedication exercises. The best possible speakers were obtained. Of course the building was not nearly large enough to hold the folks, so that the exercises were held outdoors, as many of the crowd as possible being seated on rough board benches. The women's club served a luncheon before the exercises to a large number of specially invited guests. Because the school owned no chairs everyone stood during the meal.

At about the same time posters telling of what the school had to offer appeared all over the county. They were nailed up on trees at crossroads, and on post-offices, blacksmith shops, schoolhouses, and even churches. The school believes in local advertising. Whenever a new organization or series of meetings is attempted, the local and city papers are given full information; consequently the school has much free publicity all of which has aided its work.

The community work started almost as soon as the regular classes. The first organization formed was a series of monthly meetings for rural school teachers. It seemed desirable to introduce elementary agriculture into the rural one-teacher schools, but difficulty had been experienced because of the feeling of incompetence on the part of the teacher. To overcome this, in part at least, the rural teachers were invited to the agricultural high school for an all-day session on one Saturday each month. The morning was spent on lessons in general school methods and administration given by experts furnished by the county school authorities. Each teacher brought a basket lunch and all ate together in the domestic-science kitchen. The school served hot coffee or tea, some of the high-school girls attired in their cooking uniforms acting as waitresses. The afternoon was devoted to agriculture. The teachers were given one general lesson expounded from a textbook and then went to the agricultural laboratory where an exercise was carried through by each teacher. Care was taken to have these exercises such that they could be repeated in the rural schools without expensive apparatus. The object was not only to familiarize the teachers with methods and subject-matter, but also to make them realize that real agricultural lessons were possible in their schools under their conditions. At the same time lessons in elementary agriculture, written by the principal with a view to local conditions, were printed in the monthly issues of a local educational publication which is sent free by the school authorities to every teacher in the county. By means of these lessons and the meetings at the school it was hoped that agriculture could gradually be introduced. The meetings were not successful. Transportation facilities were bad for those teachers coming from a distance. One teacher wrote that she could not get a horse to drive, and although she would gladly walk the ten miles each way necessary to reach the railroad, she could hardly do so and catch the six o'clock train for the school. Others did from their slender salaries hire teams and a driver and then came twenty miles

across country to attend the meetings. These could hardly be expected to keep that up indefinitely. Then, too, the weather combined to make conditions as bad as possible. One teacher came thirty miles to attend a meeting when the air was blinding with snowflakes and the drifts were knee-deep. She ought not to have come. Ultimately the principal felt sorrier for those rural teachers than he did for the lack of agriculture in the schools, so ceased holding meetings in the winter months. Another plan will be devised next year.

A course of ten evening lectures for farmers was projected during the winter months. The school could not give a short course of any description during school hours because there were not teachers enough. It is not possible personally to teach in two places at once. The solution appeared to be a course of evening lectures, although there did not seem to be any definite demand for such a series. Persons being asked if a course would succeed said they did not know, or else that "maybe they would attend once or twice." It was decided to make the attempt, although the principal, who was to be the lecturer, was seriously advised to limit the projected course to five instead of ten lectures because a failure would then be less disastrously apparent.

It was decided to lecture on "Soils and Fertilizers"; not that the principal knew more of that than other branches, but because the people seemed to know less and wanted the information. A new issue of posters was printed setting forth the time, date, place, and subject of the lectures, and these were placarded all over the county. The lectures were to be illustrated by experiments continued throughout almost all the course. Although alphabetically simple to the chemist, physicist, and soil technologist, the experiments vitally interested the people. Those lamp chimneys and Bunsen flames hypnotically held the folks while the talk went on. Outlines for each lecture were made by mimeograph and distributed to each person. The audience was requested always to bring the previous outlines to the lectures for reference. The evenings were understood to be serious affairs, designed for those who wanted to know and not as an entertainment for the curious. As projected they were for men, but the women asked to be allowed to attend and many did so throughout the course. The first lecture was attended by 60 persons, the second by 90, the third by 100, and so on. For the entire course, good and bad weather included, the attendance averaged 125 persons for each lecture, and this in an open farming country where practically

everyone had to drive through the dark over ice, snow, and slush. There was no doubt about the success of the undertaking. At a spring meeting of a farmers' club a question was asked about the advisability of a certain soil treatment. At once came the answer from another farmer, "If you had attended the lectures last winter at the agricultural high school you would not have to ask that; you would *know!*"

After the close of the course of lectures a Corn Congress was planned, corn being one of the chief crops of the county. Nothing of the kind had ever been held in the state before, but therein lay its charm. The affair was to last two days with morning, afternoon, and evening sessions of addresses each day. Speakers were secured from the National Department of Agriculture and from the Maryland State College and Experiment Station. Twelve speakers, some of the best in the country, held forth at the series of six sessions. All the addresses were directly on corn growing and cooking, for the women too had addresses and demonstrations. Posters again were issued, always printed in red on white paper—the school colors—and all persons, clubs, granges, and schools were invited to enter an exhibit of ten ears of corn in the show. It was pointed out again to the principal that there were only enough persons in the neighborhood to make one good-sized audience, and that while they might attend a single session they would not come to more. The result would thus be that either all would attend the best advertised address and leave the others to be given to empty seats, or else that there would be only a few people at all sessions. The outcome was different, for all sessions were well attended. People came and stayed throughout the two days, only going home to sleep. In all, over 180 exhibitors each sent in ten or more ears of corn and almost 1,000 persons attended the sessions. Twenty rural schools held small preliminary shows of their own and sent the best exhibits to the Corn Congress. Simultaneous meetings in different parts of the same building were held for men, women, and children. Although seats were at a premium it only added to the interest. Meals were served at a lunch counter by the ladies of the women's club, who again came to the aid of the school, giving the proceeds to the school treasury. For the corn show only ribbon prizes were bestowed, although the city stores would have been willing to contribute cook stoves, carpet-sweepers, washing-machines, and like articles for prizes; yet, because the school believes in amateur rather than professional sports, the ribbons alone were the prizes. At the

close of the last session the prize exhibits of corn were sold at auction to the highest bidders. By this means good seed corn was distributed throughout the neighborhood. The Corn Congress was a success. Everybody is getting ready for a bigger, better, and busier one next year.

For the women a series of monthly meetings was held on Saturday afternoons. Using the card list again, postal cards were sent out to 300 women living within driving distance of the school. The three school wagons were run over the regular routes to bring them to the meetings. Thus many women who would have been unable because of the farm work to secure a man and team to take them to the school were enabled to attend. The meetings opened by a general session at which one person spoke for fifteen minutes. This person was always someone of prominence and ability, someone vitally concerned in the world's work. The address was followed by music. The musicians and speakers have always willingly contributed their services, and usually came from the city. Following the general meeting, the women divided into four groups which were self-chosen and continuous throughout the year; at the end of each year the groups change.

The first group is for the study of domestic science. The women do not attend a demonstration, but each works with the individual equipment placed at her disposal. Nickel-plated cook stoves, bright pans, and clean china add to the attractiveness of the work. It is the same type of study given the children.

The second group does carpentry in the manual-training room. The women are taught to saw, plane, hammer, and do other simple operations. It will not be necessary for those women to wait until their husbands find time to build the chicken coops.

The third group is known as the group in home crafts. Instruction is given in chair-caning, rug-weaving, Indian basketry, stenciling, etc.

The fourth group takes up a study of modern literature. It is designed for those persons who prefer to find in the meetings a rest and relaxation rather than a means of industry. Various modern authors are successively considered, with readings from each.

The meetings have had an average attendance of 35 at each meeting and are well filling the place for which they were intended.

A literary society was formed for young people in the neighborhood who happen to be too old to go to school. The society meets once in two weeks and has a membership of about 100 persons who pay dues for

its maintenance. Spelling-bees, debates, and other so-called literary exercises are held and serve to engender a better neighborhood spirit while enlivening the long winter evenings. A reading-circle on the Chautauqua plan meets every two weeks, an interesting offshoot of the main society.

During the summer the school conducts experiments on the home farms of its pupils. All boys in the high-school department are expected to perform at home an experiment of their own selection during the summer vacation. This is in order to bring the work of the school to the people at large as well as concretely to emphasize the instruction of the winter in the mind of the student. The experiments, scattered over a territory twenty-five miles long by five miles broad, attract much attention among the neighbors and are an efficient demonstration of agricultural ideas. They range over many subjects according to the choice of the student. Many are variety tests of corn from seed furnished by the school, the corn being grown under modern methods by the student. Other students are testing herds of dairy cows, weighing and recording the milk at each milking and making frequent Babcock tests of the butter-fat content, while still others conduct a variety test of cowpeas or of popcorn. The experiments are closely watched from the school, the principal visiting them frequently during the summer and advising the students concerning them. This brings the principal in touch with the home life of the students and gives the boys the impetus necessary, sometimes, to carry on a flagging experiment.

The school tests seeds and milk for farmers. During the early spring months many samples of clover seed were submitted for a decision of the weed seeds present and of the germinative ability of the sample. Throughout the entire year milk and cream are tested for the butter-fat content. As many farmers in the neighborhood sell their product by the amount of butter-fat contained, it is highly desirable that they have occasionally an authoritative test from a disinterested source with which to compare the tests made by the dealer. The school furnishes this test.

With the activities throughout the neighborhood emanating from the new school it was but natural that there should be a renewed activity along lines of religious organization. A long disused chapel was opened, a committee of ten young men was appointed by the principal, and regular Sunday night meetings for young people were held. The people looked naturally to the school to form the organization, supply the

enthusiasm, and lead in the work. About 100 young people attend the meetings, which are undenominational in character and marked by their enthusiasm.

The community work of the school has not proved of unusual difficulty, nor has it disclosed obstacles which make it prohibitive for any school anywhere. On the contrary, the work has proved easier than seemed possible and more successful than appeared probable. Many of the dilemmas conjured up by pessimistic advisers never materialized. From this experience it seems certain that every agricultural high school in the country—even those like this with a small faculty, small funds, and small building—can make a success of community work.

Thus, when developed to its full extent, the agricultural high school is more than a mere institution for the instruction of children. It is an educational force for the whole family, and a social, cultural, and ethical center for the entire community. The expansion of the country high school into an agricultural high school is more than the addition of subjects to the curriculum and a change in name. It is an entire change in the point of view. Educators are beginning to see that ultimately one of the greatest fields of work of the agricultural high schools may be with that portion of the community which does not usually attend school at all and for which the school funds are not usually appropriated. It is by its work with the community at large—with the men and women on the farms—that the agricultural high school may find its strongest claim on popular attention and its greatest field for vital service.

B. THE DISTRICT SCHOOLS IN A COUNTY AS EDUCATIONAL AND SOCIAL CENTERS

MISS JESSIE FIELD
Superintendent, Page County, Iowa

The great need of more social life in the country, and the fact that the schools are the one agency that reach out to all the people, throw the great and vital problem of bringing a richer social life to the country directly upon these district schools. And before they can fulfil this mission, they must be entirely redirected—they must become country schools for country people. Schools they must be, primarily, that are interested in the great agricultural industry of their community and they must also succeed in interesting boys and girls in life on the farm and bring to them a vision of its great possibilities if rightly lived.

This new district school must have all the virility of the district schools of our fathers: it must be thorough and efficient and it must be in line with the newer and better things for farming. Should the teacher belong to the Grange? to the Farmers' Institute? Certainly. And the Farmers' Institute and the Grange should belong to the district school.

Very closely interwoven will this new country school be with all the great instrumentalities which are working for more intelligent farming. Last week in visiting such a school in my county, I found two racks on the wall filled with classified farm bulletins. These racks were placed where they were quite convenient of access for the larger boys. I was watching the biggest boy, with his dark, strong face, for he was the boy on whom in years gone by I had heard that the teacher had had to use the poker. Would he care for farm bulletins? To be sure, his father was a farmer but he lived off the road and was not yet interested nor did he see the value of the new things in agriculture.

It was the boy with the dark, strong face who as soon as he had prepared his spelling lesson—instead of making trouble—reached out for a farm bulletin and began to study it. I wondered, was he really interested? So I asked, "John, do you find those bulletins interesting?" "Yes," he answered, "I did not used to think they were, but

now since I have found how much is in them, I think they are more interesting than my agriculture book. There is so much in them."

It was a district school like this where all the men came and spent the day terracing the grounds, and their wives brought dinner and they ate together. And a more beautiful school ground and a happier neighborhood spirit resulted.

It was for this school that the grouchiest farmer in the district opened up his heart and came himself and brought his son and his hired man and three teams to work on the yard because the school had won a place in his respect by doing such strong and transforming work.

A live school means a live community that is working together. Our teachers one spring had at each school a germination test for seed corn. One little teacher reported: "My boys who wouldn't go across the road for a songbook, went two miles in a snow storm to get some sawdust for a germination box. And when the corn had germinated, the farmers came to the schoolhouse to see how their corn had turned out and incidentally saw the work of the school. Why, farmers came who couldn't remember when they had been inside the schoolhouse before."

We have a Babcock milk tester which we pass from school to school in the districts specially interested in dairying. After the school learns how to use it, the farmers ask to borrow it. One farmer who returned the tester yesterday told me that because of it he had sold eight cows that it was not paying him to keep. For the Babcock tester soon weeds out the cows that are not paying their board, let alone bringing a profit for the hard work of the farmer who milks them.

In districts where fruit growing is especially carried on, we hope to bring especially something of the science of horticulture. Throughout our country the great money crop is corn. So our schools are all interested in corn. Some six hundred boys are growing corn under direction and showing it for prizes.

Each summer we hold a ten days' Boys' Farm Camp. Here country boys come together for instruction in corn and stock judging, working with the actual material. They have some literary work and something of practical religion. Each day there is military drill and games and sports. Each evening there is the camp newspaper.

The coming summer, we are going to try for the first time to have a girls' camp, also. The two camps will be separate but they will eat

together in one big dining-tent. The instructors and helpers are from the Extension Department of our State Agricultural College and from among our county Y.M.C.A. workers.

We hold, annually, for our country schools a County Boys' and Girls' Corn Show and Industrial Exposition. We have entries in corn, wheat, oats, potatoes, farm devices, handy knots, manual training, cooking, and sewing. At our industrial exposition just closed there were fifteen hundred entries. Thousands came to see the exhibit. A whole district of people—fathers, mothers, patrons, teacher, and boys and girls—would come together and spend the day, eating a picnic lunch together at noon.

The prizes offered were not very large but included several trophies. There was one beautiful trophy for the school district making the best collective exhibit—and how the school districts did work for that! Everybody worked together. One young man who brought down some entries told me that, when he left home, there were six men down using their fanning mill—the only one in the district—in order to get their exhibits of grain ready. After the trophy had been awarded a bright-faced young man came up proudly to claim that he was a hired man in the winning district. And no wonder the district won. Let me tell you just a word about their red-headed teacher. The German farmer where she boarded had some pretty good corn, but he had never shown corn and did not understand how to select a sample to show, so the teacher volunteered to select it and the sample won the prize. The teacher is a country girl who has been offered grade positions now for three years in succession but who teaches in the country through choice and because she likes country schools and country people. And in this district the school is the social center. Several times I have had the pleasure of drinking coffee and eating cake with the people gathered together at this school home. Ask them where they live and they answer, "In the Jackson School District," and they say it in a right hearty way, too.

When the annual county Parents' Day at school comes around, people in such school districts as this come together at their school, no matter how rough the roads or how cold the day. For nothing else has the strong hold on the people that the school has, if it is alive enough and interested enough in the community life to have a hold at all.

II. RURAL-SCHOOL EXTENSION

A. THROUGH BOYS' AND GIRLS' AGRICULTURAL CLUBS

F. W. HOWE

Supervisor of Agricultural Education, New York State

Boys' and girls' agricultural-club work as a form of rural-school extension usually centers in the competitive idea, utilized as a factor in the educational development of the individual and the community. These clubs had their origin (in New York) in certain prizes or other inducements to participate in some kind of productive contest. Thus we have come to find in the various states, clubs for corn growing, cotton growing, potato growing, fruit growing, poultry raising, live-stock study, bird study, baking, fruit canning, cooking, sewing, and home and school improvement, each with some special incentive set at the end of the work. All of these clubs have been more or less agricultural in their general character.

In many cases the work of these clubs has definitely assumed the character of school-extension work, and as such has had a very intimate relation to the regular work of the public school. The complete integration of the club work with the more usual lines of school activity logically eliminates the necessity or advantage of special or separate organization. And so we find schools giving more and more attention to various features of home or farm work, especially on certain set occasions like "corn day," "bird day," "arbor day," and the like. In the state of Ohio, for example, it is said that "agricultural clubs, as such, are coming to be a thing of the past," so fully are their interests merged with and served by the common public schools.

The junior agricultural club has a special field, however, until the work of the school is more generally and thoroughly communized, in performing a correlating function between the school and the home and in giving objective application to things learned from books and bulletins. The county superintendent of schools has an unusual opportunity to appreciate and utilize the pupils' interest in reality and in environment to the great advantage of the educational process within

the school and also in winning from patrons a larger and more intelligent support for school improvement.¹

The general advantages that may be expected from the inauguration of boys' and girls' club work have been demonstrated by abundant experience in clubs aggregating probably more than 200,000 members. They have been summarized as follows:

1. Individually the members of such clubs have been led to observe more closely, to recognize good and bad qualities in the products they have grown, and in the insects, fungi, and other various conditions affecting their work; they have met and learned to solve some problems in the improvement of plants, fruits, animals, and housework; they have learned that improvement in one direction is not always, or even usually, accompanied by improvement in all directions; they have learned something of the value of labor, the cost of production, and the keeping of simple accounts with different farm and household affairs; they have been encouraged to read good literature and have learned some of the sources of good agricultural literature; their views have been broadened by contact with others and by visiting institutions of learning, highly developed farms, and other places of interest; and, finally, the power of taking the initiative has in many cases been strongly developed in them as individual and responsible members of the community.

2. Collectively they have learned the value of organized effort, of co-operation, and of compromise; and the social instinct has been developed in them—a matter of great importance in rural districts, where the isolated condition of the people has long been a great hindrance to progress.

3. The influence upon the communities at large, the parents as well as the children, has been wholesome. Beginning with an awakened interest in one thing—better seed corn, for example—communities have rapidly extended their interest to other features of rural improvement, with the result that in the regions affected by the agricultural-club movement there has come about a general upward trend in the thoughts and activities of the people.

4. These club activities have in many instances exercised a very stimulating, if not a “redirecting,” influence upon the ordinary work of rural schools and teachers.

5. The knowledge gained from the work of these clubs has demonstrated that the natural love of competition among boys and girls (as well as their elders) can be utilized to immense advantage in furthering their own education for efficiency.

¹ Detailed plans for the organization of junior agricultural clubs in connection with the public schools can be had in *Farmers' Bulletin* 385, U.S. Department of Agriculture.

The best evidence of the value of this type of school-extension interest can doubtless be had in reviewing the actual club work of boys and girls that has been carried on in several states. What is probably the first state-wide movement of this kind began about 1898, in New York, under the auspices of the State College of Agriculture of Cornell University, as a development from its nature-study lessons. The work was promoted largely through what was then called the *Junior Naturalist Monthly*, which has been superseded by the *Cornell Rural School Leaflet*, a publication which now reaches 75,000 members of the Cornell Farm Boys' and Girls' Clubs and about 7,000 teachers and school commissioners.

These clubs are individual school or district associations, with a simple, informal organization, and each has its own local name. Each elects a president, vice-president, secretary-treasurer, and a patron or patroness from among the adults of the school district. Each member is supplied with a distinctive button or badge.

The College of Agriculture attempts to interest the club members in each school in some definite, concrete thing to do each year. Thus in one year the Horticultural Department offered to send to each of the first hundred boys and girls who applied a dozen strawberry or raspberry plants or a half-dozen currant plants. Fifteen hundred requests were received and nine hundred supplied. Directions were given in the *Leaflet* for setting and caring for these plants through the season. Another year the Poultry Department agreed to send to a limited number of boys and girls who would write the best essay on "My Experience with Poultry" a setting of pure-bred eggs valued at \$1.25, express to be paid by the applicant. Six hundred essays were received and fifty settings of eggs sent. Another enterprise inaugurated by the college is an annual potato-growing contest for boys and girls. Each is to grow one-fourth of an acre, report his method of handling the crop, and write an essay on "How to Grow Potatoes." The prizes for this contest run from \$2 to \$15 in gold. Similar prizes are offered in a garden contest and for the best essay on "How I Kept a Garden." For the girl members a special list of prizes from \$1 to \$10 is offered for making the best loaf of bread, with an essay on "My Experiences in Bread Making."

The form of contest which attracts the largest attention, however, is the annual competition in corn growing. The prizes run from \$2

to \$15 in gold for highest yield, best report, and an essay on "How to Grow Corn." The prize-winning exhibits from each county are taken to the annual Corn Show at Cornell University. In the spring of 1909 there were nearly 450 ten-ear exhibits of corn at this show, held during "Farmers' Week," and about one-third of these came from 28 boys' and girls' clubs. There were also exhibited about 150 drawings on corn subjects, 150 essays, and 200 letters on "How We Celebrated Corn Day in Our School." This celebration of "Corn Day" has become an annual institution not only in the rural schools of New York but also in Illinois, Iowa, Nebraska, and several other states of the Middle West.

Agricultural-club work for boys in growing corn and for girls in sewing and cooking has been organized with great thoroughness throughout the entire state of Nebraska, under the leadership of State Superintendent E. C. Bishop, in connection with the Agricultural College of the State University, at Lincoln. The boys grow their show corn and vegetables under directions sent out from the state headquarters, and the girls practice baking in accordance with recipes sent out to the schools from the domestic-science department of the State University. Early in the fall a local contest is held in each school, the three prize-winning exhibits and the best three essays being then taken to a township show, then to a county exhibit, and finally to the state corn-growing and corn-cooking contest at Lincoln. This meeting includes a grand "corn banquet" which gathers from 2,000 to 3,000 boys and girls from over the state. The work in Nebraska is especially noteworthy because of the attention given to sewing and cooking for girls. Several bulletins have been issued giving particular and illustrated directions for exercises in these lines.

Similar work in Ohio, under the direction of the agricultural extension department of the State University, has reached practically all the rural boys and girls in the schools of the State. In Illinois this work began under the initiative of certain county superintendents of schools and in connection with the farmers' institutes. The organizing work of the Winnebago County superintendent of schools, O. J. Kern, has probably had the widest publicity. Here was introduced the feature of annual excursions of the club members and their parents to neighboring experiment fields and to state agricultural colleges. Club interest is also utilized in improving the school grounds and buildings

of the county. One session of the county farmers' institute is set apart for the club work, and agricultural specialists from other states as well as their own have been engaged to address these sessions.

Under similar county initiative this work was started in Iowa by County Superintendent Cap E. Miller, of Keokuk County, and by Miss Jessie Field, the superintendent of Page County. Club work for both boys and girls has also been successfully established in Berks County, Pa., by the county superintendent, E. M. Rapp. The boys in his clubs are provided with a button bearing the legend, "Boys' Agricultural-Club of Berks Co.—Better Farming." The corresponding badge for the girls' clubs carries the words, "Girls' Domestic Science Club of Berks Co.—Better Housekeeping."

Among the southern states, Texas and Georgia have been prominent in organizing this kind of work. The "Farmer Boys' and Girls' League" in the former state was organized in 1903 in connection with the Texas Farmers' Congress, and now numbers over 1,750 members. In Georgia this work has been directed by the State University, and the interest has been chiefly in corn and cotton growing and in the improvement of live stock.

A few of the more conspicuous and far-reaching outgrowths of junior agricultural-club work may here be profitably noticed. Attention has already been directed to the state-wide contests which culminate annually at the state agricultural colleges of New York, Nebraska, Kansas, Missouri, and other states that might be mentioned. As a modification of this plan these state contests are sometimes concentrated at the annual state fair, and include not only awards for club exhibits by school pupils, but also for contests in the judging of such exhibits. The last Iowa state fair offered prizes ranging from \$25 to \$200 for boys in competitive corn judging and from \$25 to \$100 to girls offering the best-prepared food products, with reasons for the work done. A variation from this plan is followed by the Colorado state fair authorities in offering a scholarship worth \$125 in any of the regular courses at the state agricultural college to the boy doing the best work in judging live stock and corn and a scholarship worth \$100 in any college or university in Colorado to the girl showing the best work in the preparation of certain foods and giving reasons for the methods used.

A still more significant development of the agricultural-club influence in its relation to school-extension work may be seen in the range

and variety of prizes offered to boys and girls by the State Fair of Montana in 1908. These prizes range from \$2 to \$25 for exhibits of work teaching girls household service and home appreciation; of work in applied civics and school service to the community; evidence of co-operative neighborhood work for school building and ground improvement; children's garden work, with plans, photographs, and descriptions; arithmetic applied to industrial and business affairs of the school, home, and community; "field work" in geography; class record of weather observations for three months or more; plan of farm (drawn, modeled, or constructed), showing buildings, irrigation system, crop rotation, etc.; construction work done by any pupil, showing mechanical and inventive ability; and best single exhibit of courses of study, plans, etc., showing ways of making school instruction more valuable and connecting it more intimately and vitally with community life.

Still another outgrowth of the agricultural-club interest is seen in the organization of boys' summer encampments, combined with a "corn show" and careful instruction in the cultivation and breeding of corn. Such a "farm boys' encampment" at Glenview Farm, Mo., is described by S. M. Jordan in a bulletin of the Missouri Board of Agriculture. A noteworthy gathering of a similar kind was held for ten days in the summer of 1910 at Clarinda, Page County, Iowa, under the initiative of Miss Field. The "vacation farm school" proposed by Principal B. J. Horchem, of the Audubon School, Dubuque, Iowa, is a modification of this plan, providing for the educational employment of town boys based on nature-study observation in public parks and grounds during the summer vacation.

While not strictly carried on under the form of club organization, one of the most interesting fields of influence exerted by junior-extension work in agriculture is found in the South Atlantic and Gulf states, under the auspices of the Farmers' Co-operative Demonstration Work of the United States Department of Agriculture. Mr. O. B. Martin, formerly state superintendent of education in South Carolina, is now in charge of this line of work for boys under eighteen years of age. So far the work done by them has been mostly in growing corn and cotton, under careful directions sent from the Department and supervised by the local agents of the government in charge of demonstration work for adults. Teachers and county superintendents co-operate very cordially in many instances.

In the year 1909 the average production of corn by boys engaged in this co-operative work was sixty bushels per acre; but four of them made notable advances over this average. Bascomb Usher, of South Carolina, grew 152½ bushels on one acre; DeWitt Lundy, of Mississippi, 147 bushels; Elmer Halter, of Arkansas, 135 bushels; and Ralph Bellwood, of Virginia, 122 bushels. These four boys won prizes offered in their respective states which entitled them to a free excursion trip to the city of Washington, where they were presented with a special diploma of honor by Secretary Wilson of the Department of Agriculture.

Under a similar plan in 1910 the following prize winners and results are reported by Mr. Martin:

Name	Address	No. Bushels	Cost per Bushel
Hughey A. Harden.....	Banks, Alabama.	120	32c.
Ira Smith.....	Silver, Arkansas.	119	8
Joseph Stone.....	Center, Georgia.	102½	29
Stephen G. Henry.....	Melrose, Louisiana.	139½	13.6
William Williams.....	Decatur, Mississippi.	146½	18
W. Ernest Starnes.....	Hickory, N.C.	146½	38
Floyd Gayer.....	Tishomingo, Oklahoma.	95½	8
Jerry H. Moore.....	Winona, S.C.	228½	43
Norman Smith.....	Covington, Tenn.	125½	
Wm. Rodger Smith.....	Karnes City, Texas.	83½	13½
Maurice Olgers.....	Sutherland, Virginia.	169	40

The trip to Washington for these boys included a presentation to President Taft, diplomas from Secretary Wilson, and a visit to Congress, Mount Vernon, the various government departments, the Congressional Library, the Zoölogical Gardens, and other places of interest. This experience will be worth much to their home communities as well as to themselves for life.

It is not uncommon for 500 to 1,000 people to gather at the county seats to witness the award of local certificates that are given in the process of sifting out the first prize-winners in the several states. During the year 1910 the governors and superintendents of education in eleven southern states gave diplomas of honor to all boys who produced as much as seventy-five bushels of corn per acre at a reasonable cost. This is having a marked effect in the increasing average of acre-production of corn in these states. And Mr. Martin says: "It will have something to do with reducing the cost of living also."

This work has now been organized in nearly six hundred counties

in the South, and government agents, public-school officers, and teachers have co-operated in the organization and instruction of the various local associations. On May 15, 1910, the memberships in these states—Alabama, Arkansas, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, and Virginia—aggregated 46,225. General public interest in their work is evidenced by the fact that merchants, bankers, and other public-spirited citizens offered more than \$40,000 worth of prizes, consisting of money, farm implements, excursion trips, ponies, pigs, bicycles, watches, and many other articles calculated to gladden the hearts of the youthful competitors.

In awarding prizes the following scheme has been adopted:

- | | | |
|---|----|----------|
| <i>a)</i> Greatest yield per acre, weighted at..... | 30 | per cent |
| <i>b)</i> Best exhibit of 10 ears..... | 20 | “ “ |
| <i>c)</i> Best written history of the crop..... | 20 | “ “ |
| <i>d)</i> Best showing of profit..... | 30 | “ “ |

Farm experts are selected to pass judgment on *a)* and *b)*, and school officers and teachers on *c)* and *d)*. In calculating items under *d)*, \$5 is uniformly reckoned as the rent of an acre of land, 10 cents per hour for the work of each boy, 5 cents per hour for each horse used, \$2 for each two-horse load of stable manure, and current market prices for commercial fertilizers.

In leaving this field of educational extension the comment may be ventured that the boys and girls of the North, among whom agricultural-club work was first organized, must needs look to their laurels if they are not sooner or later outstripped by the youth of the Southland. For the sake of comparison, and in concluding this article, let us turn to the record of a northern state in which the writer has had some interesting personal experience in organizing such clubs.

The first corn-growing clubs for Michigan boys and girls were organized in three or four counties in 1908, under the initiative of Congressman J. C. McLaughlin in co-operation with D. J. Crosby of the Office of Experiment Stations and with the Michigan Corn Improvement Association. The next spring this work was extended to seven or eight counties, approximating 1,500 members. The reports for 1910 show that about twenty counties are now organized and the interest, as shown by prizes offered, is rapidly increasing. One county

has set the mark at \$1,000 for prizes to be offered in the boys' and girls' corn show, with at least \$2 to every exhibitor. In another county a thousand-dollar silver trophy, offered by one of the great breakfast food manufacturers, is being exhibited to arouse interest, together with the ear of corn which won this trophy last year. But undoubtedly the prize which excites the greatest enthusiasm among Michigan boys and girls this year is the one-thousand-dollar five-passenger touring car offered by a Lansing automobile company for the best ten ears of corn exhibited by any competitor under twenty years of age.

Perhaps the most concrete evidence of the widespread influence in this country of the competitive work of boys and girls in the line of agricultural and educational extension is to be seen in the Fourth International Corn Exposition at Columbus, Ohio, January 30 to February 11. Since the famous exhibit by fifteen hundred Illinois boys in the exposition at St. Louis in 1904, these exhibits have steadily improved in magnitude, quality, variety, and educational significance. It is not saying too much to suggest that the world-wide influence of the International Corn Exposition is due in no small degree to the factor represented by the enthusiastic interest of hundreds and thousands of associated boys and girls in this country; and it may not be too presumptuous to forecast the time when this junior agricultural-club movement may find a conspicuous place in the educational progress of every other leading nation as well as in the United States.

B. RELATION OF RURAL SCHOOL TO BETTER HOUSEKEEPING

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Through the public-school system we have found a means of stimulating an interest in, and actually developing, better agriculture practice on the farm. Moreover, we have learned that the farm and the farm community need more than simply better things in the field and in the barnyard. After all, that which does most to make the farm community a center of interest, and develops better business practice, better living, better ideals, happier existence, and stronger citizenship, is the farm home as influenced by those things in which the household is concerned.

For this reason, we are urging that hand in hand with the teaching of farm crops, farm animals, horticulture, and dairying, we should include domestic science, domestic art, gardening, and manual training in their relations to the home and the business of the farm.

Better housekeeping in farm homes means better farming and better citizenship. Too many farmers have become discouraged, disheartened, and discontented, and have failed to make the most of their opportunities and to make the best use of their energies, capital, and business ability, because of the adverse conditions in the farm home.

The farm home is therefore a vital question. It merits our close attention, our careful thought, and our best effort directed toward the establishing of the best there is in home making.

In establishing better practice on the farm, we have found a great waste of effort when directed through the older men. Their old habits and their ideas of what constitutes the best method of procedure are too firmly set to yield to ordinary influences. We must work largely with the young men. We can do this in a large way to best advantage with the boys whom we can reach through the school.

So it is with the farm home. The ordinary conscientious, hard-working farmer's wife has grown so accustomed to inconveniences,

hard work, and the omission of so many of the factors that count for joy, ease, and better home comfort, conveniences, and aesthetic relations, that she is too often slow to ask for a change or to accept the proffered gift of better things in her home. But we can reach the home through the school girl whose quick perception, intuitive instinct, and eager anticipation lead her to receive suggestions and to act in those things which attract and hold her interest.

I can here mention only one phase of the work which has done so much for better housekeeping through the public schools.

Nebraska has at this time enrolled in state, county, and district boys' and girls' clubs over 32,000 young people under 21 years of age. Of this number, 2,200 girls are enrolled in the Home Experiment Department conducted directly by the state department of public instruction. The following quotations taken from the announcement bulletin issued March, 1910, explains the plan:

We want to help a number of the most ambitious young people in each county to conduct some experimental work at home and to take up some definite work under the direction of the county superintendent and this department.

This will be known as the Home Experiment Department. The plan provides for a number of young people in each county some definite work in which they are to receive instruction and on which they are to report progress each month. We want for this special work only such boys and girls as will give particular attention and will be capable of getting results. Their work will form a substantial nucleus for the general county organization which can include in addition thereto whatever phases of work the county superintendent sees fit to introduce. It will put the work on an educational basis which will be helpful alike to the school and to the home in showing what can be accomplished by carefully directed, continuous effort.

To the boys and girls who became members of this department our plan is to send a pamphlet each month. These pamphlets will contain something of interest to every member.

Each month the members will be expected to report on some particular thing accomplished, depending upon the division of the work they enter. These reports are to be sent to the state superintendent of public instruction, Lincoln, Nebraska, and to the county superintendent if desired.

The instructions, pamphlets, and supplies are furnished members free. Each person on becoming a member must agree to carry out fully the directions and make the required reports.

DOMESTIC SCIENCE

Each member will receive each month from April to November, recipes and definite instructions for carrying on the work.

1. *Cookery*.—The work in cookery includes some of the best methods for the cooking and serving of nutritious foods, and the canning and preserving of some of the fruits in season each month. In connection with the instruction in canning and preserving, in June a bulletin will be sent on *Bacteria and Moulds: Preservation of Foods*.

General instructions in cookery: In all the work in cookery, the members of the club will be asked to conform to certain general rules in order that the measurements may be definite, and the results uniform.

The table of measurements is as follows:

3 teaspoonfuls (tsp.)	= 1 tablespoonful (tbsp.)
16 tsp.	= 1 cup (c.)
4 cups	= 1 quart (qt.)

All measurements are taken *level*. With a knife scrape off all excess from a spoon or cup when measuring either dry or liquid ingredients.

Flour is measured after sifting.

In preparing a recipe, as a general rule, all dry ingredients are mixed and sifted before adding the remaining ingredients.

In any recipe calling for beaten eggs, care must be taken to beat the egg immediately before using, as the egg does not have the same leavening power after standing.

2. *Butter-making*.—During the season a bulletin will be sent out on the sanitation and care of the milk and cream, churning of the cream, finishing and packing of the butter. Those entering this department will receive the bulletin and a blank report card for reporting the different items concerning the work. It is expected that classes will be provided in county contests for butter-making.

3. *Sewing*.—The work in sewing will be practical and the articles made will be those things which are necessary and useful to the girl.

During the season instructions and materials will be sent each one who becomes a member of this department and reports will be required.

In April, the samples of overhanding, hemming, hemming flannel, back stitching, and running will be finished according to directions, and returned.

In May, the stitching, overcasting, and felled seams; in June, the Dorothy seam, feather stitch, satin stitch, and French knots; in July, gathering on a band; in August, the making of a petticoat; in September, an underwaist; and in October, a canvas sofa pillow.

As these samples and questions are completed and returned to the office

they will be clamped together and the complete sewing book returned to the county superintendent to be handed to its owner.

In addition to the sewing book, there will be instructions for making those articles which will be made and used in the home. The club members will furnish their own material, and the state department the patterns and instruction necessary for hemming towels, making a sewing apron, holders, the making of a garden hat, marking of household linens, and the making of the large underwaist and petticoat after the model of the small ones.

In addition to this there will be patterns furnished for a complete outfit for a twelve-inch doll, and patterns for a complete outfit of infant clothes for a ten-inch doll.

In sewing, special care should be taken to keep the work as clean and neat as possible, to have the hands and nails clean, and a clean apron to protect the work.

A large towel or pillow case may be used to keep the work in when it is not being used.

4. *Sweet-pea culture*.—Instructions will be given for planting and care of sweet peas.

A sample page from the directions sent to the members by separate bulletins is printed below. Each bulletin contained the necessary pieces of sample cloth, thread, needles, hooks and eyes, and buttons for doing the practice work outlined for sewing. These samples were returned by mail to the state superintendent after the member had performed the required work. The articles made remained the property of the girl and were generally exhibited at the local or county-school exhibits. The directions quoted are for May, the second month of the course.

I. COOKING

Pot roast.—Select a four- or five-pound piece of beef from the rump, wipe with a damp cloth, trim off all excess fat. Put in a kettle with one pint of boiling water, cover very tightly. Let simmer slowly until tender when pierced with a fork—about four hours—adding a little water as needed. Thirty minutes before removing from the fire add 1 teaspoon salt and $\frac{1}{2}$ teaspoon pepper.

At the end of four hours the meat should be a rich brown color, and so tender that the fat and bone will naturally separate itself from the lean of the meat when lifted out on the platter.

Brown gravy.—Add enough boiling water to the liquor in the kettle to make $1\frac{1}{2}$ cups. Let boil, and beat in with a fork $\frac{1}{2}$ cup water and $\frac{1}{4}$ cup flour which have been thoroughly rubbed together.

Boil three minutes, season, and strain if necessary.

Dumplings.—

1 cup flour	$\frac{1}{2}$ teaspoon salt
1 teaspoon baking powder	2 teaspoons butter
	$\frac{1}{2}$ cup milk or water

Mix and sift the dry ingredients, rub in butter with tips of fingers, add milk gradually, stirring with a knife. Place by tablespoonfuls on buttered pie tin, steam for twelve minutes. Arrange on the platter with meat, a spoonful of gravy over each dumpling.

II. SEWING

Overhanding.—Materials required:

Cross-bar muslin: 6 inches long and 4 inches wide.

Thread: No. 80 white cotton.

Needle No. 10.

Cut the cross-bar muslin in two pieces, each 6 inches long and 2 inches wide. Trim evenly on all sides, leaving no frayed edges. See that all corners are perfect.

Carefully turn, baste, and hem sides (1) to (2), (3) to (4), (5) to (6), and (7) to (8) according to the directions in the last lesson.

Overhanding is the sewing together of folds or selvages with small stitches taken over the edges.

Baste together pieces (A) and (B) holding right sides together with edges (4) to (3) and (5) to (6) together.

The directions for overhanding continue through another half-page and are followed by directions and pattern for making a "machine-made apron."

The cooking recipes for other months included: Chinese muffins, cocoa, emergency puddings, warm apple sauce, hard sauce, canned cherries, white bread, baked pears, blackberry jam, preserved strawberries.

The work in cooking and sewing has been instrumental in the adoption of better methods, better ideas, and better ideals in the homes reached and in the bringing-about of better home conditions in the communities.

The quality of work done by these girls in their homes, working from printed directions, with the encouragement given by the teacher, is such that there is no doubt about the effectiveness of this plan to secure good work and to introduce a new element of interest and activity in the home, and at the same time to vitalize the work of the school.

III. RURAL-SCHOOL LIBRARIES

A. B. GRAHAM

Superintendent of Agricultural Extension, Ohio State University

More than half a century ago provision was made at great expense for public libraries in rural communities. These were to be kept at district schoolhouses. Although great care was taken to select books that would be both entertaining and instructive, the collection was not what we would call the best, for this movement was one of those much-needed movements that came long before the people were ready for it or before much thought had been given to the writing of books for children. In this collection of books were found volumes on agriculture and other industries. Those who read these volumes were much helped by the science information of the time.

Only a very few of the people were given to looking upon the cultural value of the library and still fewer to the help that might be given through the books to the industries, especially to agriculture. No serious thought or consideration needed to be given to science for the maintenance of soil fertility, etc. The virgin soil, when drained, produced about all that was needed for home consumption and the far-away market.

The establishing of village and city libraries during the time of the old academies was productive of a culture that has been projected into the better strata of society in those villages and cities. These, with other educational advantages, have caused the rural resident to look with envious eye upon his village or city neighbor.

The establishing of the rural-school library gives to the country resident, whether youth or adult, an opportunity to avail himself of just as good reading material as is afforded his village or city friend. There may be assigned three good reasons why the farmer and his children should seek reading material; the first and least important is for pastime. His isolation and lack of opportunity for immediate social intercourse makes reading in the home very necessary. Some danger may arise from a haphazard selection of books for the sole purpose of pastime and the result be baneful rather than helpful. Second,

for elevation and his own inspiration; even though there is much work to be done on the farm, there comes a time in the long winter evenings that can and should be given over to association with the best men and women through their writings. The school library as a central point from which books may be obtained for general reading in the home should, and does in most instances, offer a safeguard against the selection of books that contain nothing in particular to commend them. The school superintendent, a few teachers, and one or two well-informed citizens of the community usually find it a duty delegated to them to make the selection of volumes for the school library. Their careful observation and wide reading make them competent to select such books. Third, that the habit of reading may be acquired. One who has formed such a habit cannot be satisfied until he has something at hand to read. In the years of early youth habits of any kind are most easily formed; hence, if a reading habit is to be fixed, young people must have an opportunity to secure books that are not only suited to their needs but also to their desires. During certain periods in the lives of children they want stories that are quite imaginative; then they demand great activity; later, the story-book must tell of heroic deeds performed; and still later the young reader prefers a high-grade love story in the central figure of which the very amorous nature of the child finds itself embodied. Following this, he seeks the leader who may be found in the pages of history, commanding an army of men or undertaking and completing some great engineering enterprise.

The rural school comes a little nearer than any other organization to being the center of a variety of community interests. A greater percentage of the people of any community can be reached from the little country schoolhouse than can be reached through the public libraries or through the schools of a city when an equal number of people in each place is considered. The frequent communication of the rural home with the rural school through the child who attends it, brings the little library into close contact with that home. For this reason, if for no other, it is a little nearer to the people who support it than is the city library.

The country-school library leads to much reading at the fireside. The natural result is that more small private libraries are built up in the homes than would be had there been no opportunity for general reading in the home. In some communities it has been found that

prior to the establishing of the library at school the number of books in the homes could be counted on the fingers of one hand. Sometimes the Bible, the last agricultural report, and a Hagerstown almanac made up the library for young and old. The same home, or others like it, has coming to it some low-grade story paper or so-called agricultural paper whose subscription price is something like ten cents for three or perhaps five years.

SELECTING THE BOOKS

The selecting of books for any library should be determined much as has already been suggested. The subject-matter should be elevating and the style suited to the predominant characteristics of the child at the period in which the book is most likely to be read. It is useless to discuss the tastes for different kinds of reading matter as may be noticed in the two sexes. A small library can reflect only to a very small degree the cause for the difference in taste between boys' and girls' choice of reading material. Since so many of these library books must be selected with a view to establishing the reading habit in both old and young, the size and number of the pages should not be left out of consideration. Those who have not formed the reading habit will invariably pick up a small book, look at it to see how profusely it is illustrated, and then turn to see how many pages there are. The rural districts are not alone in having a few here and there who take a kind of pride in telling that they have never read any book through. These, too, can be reached if the age and some one or two of their peculiar characteristics are kept in mind in the selecting of books. Book companies are so very aggressive in marketing their goods that they make up stock libraries from their own publications, ranging in price from \$5.00 to \$25.00 and too often school-board members as well as teachers are willing to spend what money they have for a set of such reading matter or hand-me-down libraries. The very best books are often to be found published by firms about whom little or nothing is known. It pays to seek the book and the publisher. Some of the old novels and stories such as *Sartor Resartus*, *Mill on the Floss*, *Adam Bede*, *Reveries of a Bachelor*, *Baron Munchausen*, Prescott's *Conquest of Mexico*, and *Hero and Hero Worshippers* take up space in some of the so-called rural-school libraries. There is no doubt but that these are worth reading, but the reading habit will not be formed

very soon where a library is stocked up on such books as these that have been bought for a quarter apiece or even less at some cheap book store or mail-order house. The number of books never made a library. One hundred books, well selected, are worth a thousand that merely take up shelf room or a lesser number that have nothing but green or red bindings and gilt letters to commend them. The little district-school library should have, besides the literature, stories of history and geography, and many books on nature, games, etc. Here, too, is the opportunity to introduce elementary texts on industrial subjects.

Books selected for the State Pupils' Reading Course are suited to the needs of children in the elementary grades and ought to be a part of every school library. In the list appended such books will be found as have been chosen for the Ohio Pupil's Reading Course. In supervised schools there should be a few texts on general pedagogical subjects.

MEANS OF RAISING MONEY FOR BOOKS

Rural people have very seldom been the beneficiaries of any of the gifts of Carnegies or Rockefellers in sufficient amounts to do much good for the building of libraries. One man at Granger, Medina County, Ohio, bequeathed \$1,000, the income from which is to be used annually for purchasing books for the school library. A member of the Royal Baking Powder Company, a former Miami County man, gave very liberally to the fund of a township-school library in Bethel Township of his native county. Not many such bequests or donations are on record. The proceeds from socials, fêtes, commencements, and lecture courses (if any money remains from the lecture course) have been used to build up the libraries. If the township is the school unit and the little libraries are to be located in district-school buildings, then the public funds of the township should be used for the purchasing of books, that the people of each community or each school district may have an opportunity to read much the same books. In the state of Ohio, township boards of education are authorized to appropriate annually \$250 from the school funds for district-school libraries. Judging from both experience and observation, the writer is of the opinion that at least 300 books of the same title and binding should be found in each school-house. In addition to these there ought to be a number of books that are of different titles and authorship, and perhaps more expensive, which may be boxed and circulated from school to school in the township.

Where no library is maintained, advantage should be taken of circulating libraries such as are maintained by a good many states in connection with the State Library at the capital city. These boxes contain from forty to fifty books and can be secured upon application and retained for the school year. Usually the only charge is the expressage to and from the state library. Three hundred books are sufficient for the permanent district-school library unless a habit of excessive or disproportionate reading is entered into; i.e., the fourth-grade child who reads from ten to fifteen books in a year and does the work assigned from his texts for recitation has attempted quite enough. While the danger arising from excessive reading may not be so great as from not reading at all, yet it remains to be said that the average American youth who has the unrestrained reading habit is often gorged with good matter that is not allowed time for proper mental digestion. Again, let it be said that it is not how large a library is that determines its good qualities but rather how nearly it comes to being suited to the different periods and conditions of the child and to the work to be done in the school and in the community. A removal of the possibilities for excessive reading in any one of these periods is to be brought about by avoiding an over-supply of books on any subject; in the degree that books are selected along the lines of these subjects, in that degree the reading of the community as well as that of the school can be controlled. It is not to be denied that there is such a thing as excessive reading both in the school and in the home. Here is one more opportunity for the teacher to use her tact in directing the attention of the children to the particular work assigned them for class and to co-operate with the parents toward helping the child to be considerate of his manual duties in the home. It is about as difficult to control or regulate excessiveness in doing a good thing beyond keeping it in harmony with one's duties along other lines as it is to establish a right habit.

THE CARE OF BOOKS

The indifference of teachers and others to the use to which libraries are placed causes such large losses that many school boards and others interested in the library movement have become discouraged and it is difficult to secure sufficient money to re-establish what once was. In some township high schools a boy or a girl is appointed and paid as a librarian, to give out, record, and note the return of books from the

library. In some places the librarian devotes a few minutes after school to this work. Whether the library is one for township high schools or for the district school, the necessity for recording the going and coming of the books is imperative.

In one township in Ohio where there are over 5,000 books in its district schools, practically no books have been lost, because of the careful records kept. Twice a year the teachers are required to check up the books, once at the holidays and once at the close of the year. Many books have been worn out but they have been replaced by new ones. The books should be kept in neat and attractive cases with glass doors through which the titles of the books can be seen. This is one means of attracting the reader to the contents of the book. The case makes a valuable and attractive piece of furniture in the schoolroom and the books are oftentimes given the care that would not be given them if they were lying around on dustladen shelves, window sills, cupboards, and other dirty places. In the school there should also be found a table on which a few books may be placed temporarily. On this table should be found a clean little newspaper such as *The Pathfinder* and an elevating story magazine such as *Our Young People* or *The Youth's Companion*.

The end or aim of all that has been said concerning the encouragement of the habit of reading, the selection of books, the means of establishing and maintaining the library, and the care that should be taken of the books is that the library may become a permanent part of the school equipment, that the rural school may become a more helpful social and educational center for the community supporting it.

The appended list of books, classified under three heads and assigned to certain grades, has been used for several years in each of thirteen district schools in Springfield Township, Clark County, Ohio. Many other libraries are found in the rural schools of Ohio but none where the same care has been taken to make the selection and preserve the books.

LIBRARY CATALOGUE, SPRINGFIELD TOWNSHIP, CLARK CO., OHIO

LITERATURE

	May be read by pupils of grades
A Man without a Country (E. E. Hale)	6, 7, 8
American Literature Primer (Mildred Watkins).....	6, 7, 8
*Beautiful Joe (Sanders).....	5, 6

* Books marked (*) adult readers will enjoy.

May be read by
pupils of grades

*Being a Boy (Warner)	6, 7, 8
*Birds' Christmas Carol (Wiggin)	4, 5, 6
Black Beauty (Sewell)	4, 5, 6
Christmas Carol (Dickens)	7, 8
Child Life in Poetry and Prose (Whittier)	3, 4, 5
Courtship of Miles Standish (Longfellow)	7, 8
6 Cyr Primers (Ellen Cyr)	1, 2
Dog of Flanders (Ramée)	5, 6, 7
Don Quixote (Cervantes)	7, 8
Eugene Field Book	5, 6, 7, 8
*Evangeline (Longfellow)	7, 8
Fables and Folk Stories (Scudder)	2, 3
6 First Readers (Cyr, Brumbaugh, Stickney)	2
*Five Little Peppers (Sidney)	5, 6, 7, 8
*Grandmother's Story of Bunker Hill (Holmes)	7, 8
Hans Andersen's Stories	4, 5, 6
*Hoosier School Boy (Eggleston)	5, 6, 7
*Hoosier School Master (Eggleston)	7, 8
*Irving's Sketch Book	7, 8
Ivanhoe (Scott)	7, 8
King of the Golden River (Ruskin)	5, 6, 7, 8
Letters to Farm Boys (Wallace)	7, 8
*Little Lord Fauntleroy (Burnett)	4, 5, 6
Little Nell (Dickens)	6, 7, 8
Odysseus	7, 8
*Old Fashioned Girl (Alcott)	6, 7, 8
Oliver Twist (Dickens)	7, 8
Open Sesame (Bellamy & Goodwin), Vol. I	4, 5
Open Sesame, Vol. II	5, 6
Open Sesame, Vol. III	7, 8
Our Country in Poetry and Song	6, 7, 8
Paul Revere and Other Poems (Longfellow)	6, 7, 8
*Pilgrim's Progress (Bunyan)	7, 8
*Rip Van Winkle (Irving)	7, 8
Rhymes of Childhood (Riley)	6, 7, 8
Riverside Primer and Reader (Scudder)	1, 2
Robinson Crusoe (Abridged: DeFoe)	3, 4
6 Second Readers (Cyr, Brumbaugh, Stickney)	2, 3
*Snow Bound (Whittier)	7, 8
*Spyri's Heidi	6, 7, 8

* Books marked (*) adult readers will enjoy.

May be read by
pupils of grades

Stories for Children (Lane)	1, 2
Swiss Family Robinson (Wyss)	7, 8
Tales from Shakespeare (Lamb)	7, 8
Talks about Authors	6, 7, 8
2 Third Readers (Cyr, Brumbaugh)	3, 4
*Tom Brown's School Days (Hughes)	7, 8
Tanglewood Tales (Hawthorne)	6, 7, 8
*Uncle Tom's Cabin (Stowe)	7, 8
Verse and Prose for Beginners	2, 3
Whittier's Poems	7, 8

HISTORY

American Life and Adventure (Eggleston)	3, 4, 5
Beginners' American History (Montgomery)	4, 5, 6
Biographical Stories (Hawthorne)	6, 7, 8
Boyhood of Famous Americans	4, 5
Colonial Children (Pratt)	4, 5, 6
Conquest of the Old North-West (Baldwin)	7, 8
Discoverers and Explorers	4, 5, 6
Four American Inventors	6, 7, 8
*Four American Naval Heroes	6, 7, 8
*Four American Patriots	6, 7, 8
*Four American Pioneers	6, 7, 8
*Four American Poets	6, 7, 8
*Four Famous American Writers	6, 7, 8
*Four Great Americans	5, 6, 7
*Fifty Famous Stories Retold (Baldwin)	3, 4, 5
*Franklin, Benjamin, Autobiography of	7, 8
Girls Who Became Famous (Bolton)	7, 8
*Grandfather's Chair (Hawthorne)	6, 7, 8
Grandfather's Stories (Johonnot)	3, 4
Great American Educators (Winship)	
Great Americans for Little Americans (Eggleston)	2, 3, 4
Great Artists (Horne and Scobey)	6, 7, 8
Heroic Deeds (Johonnot)	4, 5, 6
History of Education (Kemp)	
Lincoln, Abraham, Life of	7, 8
Lives of the Presidents	6, 7, 8
Old Bay State (Brooks)	7, 8
Old Dominion (Cooke)	7, 8

* Books marked (*) adult readers will enjoy.

	May be read by pupils of grades
Old France (Pitman)	7, 8
Old Greek Stories (Guerber)	7, 8
*Olden Time (Johonnot)	5, 6, 7
*Our Country (Johonnot)	5, 6, 7
Pennsylvania (Walton and Brumbaugh)	7, 8
Poor Boys Who Became Famous (Bolton)	7, 8
*Short Stories from English History (Blaisdell)	6, 7, 8
Spanish-American War	6, 7, 8
Spanish in the South-West (Winterburn)	7, 8
Stories of the Chosen People (Guerber)	7, 8
Story of Lafayette	6, 7, 8
*Stories of Ohio (Howells)	6, 7, 8
*Tales from Ohio History (Venable)	6, 7, 8
*Ten Boys (Andrews)	5, 6, 7
True Citizens (Markwich and Smith)	7, 8
The Young Citizen (Dole)	7, 8
*Thirteen Colonies (Guerber)	5, 6, 7
*Uncle Sam's Secrets (Austin)	7, 8
Washington and His Country (Irving and Fisk)	7, 8
*Washington, George, Life of (Scudder)	6, 7, 8

SCIENCE

About the Weather (Harrington)	7, 8
Agriculture for Beginners (Burkett, Hill, and Stevens)	7, 8
American Indian (Starr)	5, 6, 7
Around the World, Part I (Carroll)	2, 3
Around the World, Part II (Carroll)	3, 4
Around the World, Part III (Carroll)	4, 5
*Asia (Carpenter)	6, 7, 8
Australia (Carpenter)	6, 7, 8
Aunt Martha's Corner Cupboard (Kirby)	4, 5
Birds and Bees (Burroughs)	7, 8
Child Book of Health (Blaisdell)	4, 5, 6
Child Life in the Country	3, 4
Children of the Cold (Schwatka)	4, 5, 6
Each and All (Andrews)	3, 4, 5
*Europe (Carpenter)	6, 7, 8
Feathers and Furs (Johonnot)	3, 4
First Book of Birds	5, 6, 7, 8
First Principles of Agriculture (James)	Adults

* Books marked (*) adult readers will enjoy.

	May be read by pupils of grades
Home Geography (Long)	3, 4
Home Geography (Farr and McMurry)	3, 4, 5
Insect World (Fignier)	7, 8
*Life on a Farm (Shepard)	7, 8
Little People of the Snow	3, 4, 5
*Lobo, Rag, and Viven (Thompson)	6, 7, 8
*North America (Carpenter)	5, 6, 7
Our World Reader (Hall)	4, 5, 6
Our Bodies (Blaisdell)	7, 8
Playtime and Seedtime (Parker and Helm)	2, 3
Practical Agriculture (Bailey)	Adults
Principles of Agriculture (Goff and Mayne)	7, 8
Rural School Agriculture (University of Minnesota)	7, 8
Seven Little Sisters (Andrews)	3, 4, 5
*Sharpeyes and Other Papers (Burroughs)	7, 8
Shy Neighbors (Kelley)	4, 5, 6
*South America (Carpenter)	6, 7, 8
Stories of Animal Life (Bass)	2, 3
Stories of Big People and Little People (Shaw)	4, 5, 6
Stories of Indian Children	3, 4, 5
Stories of Insect Life, Part I	3, 4, 5
Stories of Insect Life, Part II	3, 4, 5
Stories of Plant Life (Bass)	2, 3
The Sciences (Holden)	7, 8
Triumphs of Science (Lane)	7, 8
Uncle Robert's Visit (Parker and Helm)	3, 4, 5
Wings and Fins (Johonnot)	

* Books marked (*) adult readers will enjoy.

IV. THE RURAL SCHOOL AS A MEANS OF DEVELOPING AN' APPRECIATION OF ART (INDOOR AND OUTDOOR)

O. J. KERN

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The reader should not be misled by the title of this article. There will be no attempt to discuss this from the artist's point of view. What follows is a simple story of twelve years' effort to secure more attractive school grounds and schoolhouses among the people who live in the open country. At this stage of development perhaps the terms Outdoor and Indoor Art as applied to the country school are not the most fitting ones.

I became county superintendent of schools in December, 1898. It took me about one year to learn conditions so that I might know what the problem really is, so far as the physical conditions of the country school are concerned. There were then 118 school grounds and houses, many of them far from being an inspiration to the boys and girls who frequented them more or less regularly and lovingly. The problem was how to arouse 150 school teachers, 360 school directors, 4,000 school children, and the patrons in general to undertake some movement to better conditions. Some of them have not yet been aroused. I am living in hopes that they will yet see a light.

We began with the teachers. The county was divided into four divisions with a monthly meeting in each division for six months of the year beginning with September. These were local meetings for work, and were aside from the annual teachers' institute which is held the last week of March. The county superintendent attended every one of these local meetings, and he required no teacher to do more reading or study than he himself was willing to do. By the development of the interurban trolley system in this county he has been able to consolidate these four divisions into two. This gives him more Saturdays for office work. But these local teachers' meetings have been the great means of securing unity of educational purpose and effort. Once a month the teachers come together for the round-table discussions on ways and means to

arouse a strong, healthy public sentiment among the farmers for better houses and more attractive school grounds. We never talked to the farmers about "The Ethical and Esthetic Influences of Outdoor and Indoor Art," as factors for the moral regeneration of the "rural regions." The farmer must be met on his own ground. If you tell a farmer in Winnebago County that "the cow runs," he understands that at once. And that simple statement is all there is to it anyway. But a simple statement oftentimes is not used by us teachers. Instead of "the cow runs," we say rather that "the bovine quadruped in response to external stimuli finds immediate expression in discharges of motor activities." You can imagine a farmer standing around watching his cow "motor" along like that!

But when you tell a farmer that the schoolhouse should be as good in equipment and management as the best dairy barn or creamery, not to make money but to develop character, you are meeting him on common ground. And at the same time if you can show him a picture of school-room improvement, the impression is all the greater. For this reason I make much of the camera, the printing-press, and stereopticon, so that farmers may hear with their eyes as well as with their ears. Indeed sight is far more effective than sound. A picture on a screen before a country audience results in things being done. A learned paper on art before the same audience puts them to sleep.

Likewise when you tell a farmer that the country school grounds should measure up with those of the best farm home grounds in beauty he will not fail to catch your meaning. He does not yet understand much about the best approved principles of landscape planting. He will not appreciate very much along this line in a theoretical discussion from some club woman who believes she has a mission to "uplift" the rural landscape at a farmers' institute meeting. But there is great promise with the children of these same farmers if only the teacher and superintendent value the opportunity they now have to create new ideals among these same children through the medium of the country school.

An earnest, enthusiastic supervising officer (please emphasize the idea of enthusiasm) can fully appreciate the value of the momentum acquired by earnest co-operation and counsel of country-school teachers through twelve years of regular teachers' meetings supplemented by live teachers' institutes. Once arouse the teachers and you cannot fail to get the children. And with the children engaged you are sure to get most

of the parents out on the firing line. This means plenty of hard work, but that is the price of success.

Of course the first thing emphasized in these teachers' local meetings was better schoolroom work and methods in carrying out the course of study. This is fundamental, for a teacher's first business is to teach school and to teach it so well that the confidence of the patrons is assured. This paper will not go into details on methods and management as far as the schoolroom work is concerned. But good reading, spelling, arithmetic, geography, etc., will more likely bring trees and vines to the school grounds and pictures and curtains to the schoolroom than the lack of good results in the three R's. A teacher who does good schoolroom work will soon find a way to enlist her district to improve grounds and building.

Of course we read books and bulletins. I secured all the bulletins I could from the United States Department of Agriculture; the American Park and Outdoor Art Association, now the American Civic Association; and the *Youth's Companion*. These were given to the teachers and mailed to school officers and leading farmers. We made use of Arbor Day Annuals and tried to see to it that we did more than simply engaging in a pleasant conversation about trees instead of actually planting them. To be specific, there is bulletin No. 134, *Tree Planting on Rural School Grounds*, issued by the United States Department of Agriculture. This I sent to two hundred teachers, to three hundred and fifty school directors, and to about one thousand farmers. I wanted them to know that trees would grow on country-school grounds if given a fair chance. The table of contents of this bulletin is as follows: "Reasons for School-Ground Planting"; "Arbor Day and School-Ground Planting"; "Preliminary Arrangements for Planting"; "What Planting to Do"; "Kinds of Trees to Plant"; "Obtaining the Trees"; "How to Plant the Trees"; "Why Trees Die in Transplanting"; "Care of Trees after Planting"; "Studies for the Teacher and School"; "Facts about Trees."

The above is a sample of the material used to inoculate the people with the bacteria of school improvement.

In 1901 I began to use the camera in earnest, taking pictures of local conditions good and not quite so good. Good half tones were made by firms who did good work and were used on first-class paper. During the last nine years my annual report has gone into every home in the county outside of the city of Rockford. The reports for 1902, 1903, 1904, 1905, 1906, 1907, 1908, 1909, and 1910 represent a total number of

50,000 copies at a cost of \$7,500. These reports are well illustrated and printed on the best of paper. The effort is to have nothing but a thing of real artistic merit to go into the country homes. This is surely raising the standards in art appreciation, so far as the fundamental principles can be set forth in this way. These reports contain pictures of things that have been done in various schools in the county and thus prove an incentive to more backward communities to progressive effort. Illustrations of good planting effects outside of the county are shown, so the people may get better ideals.

The reader will not ask for any reports previous to 1910, for the supply has long since been exhausted. These reports must be of some value, the writer hopes, for requests have come from all over the United States for the privilege of purchasing these in lots. Fully 1,000 copies of each report could have been disposed of in this way. But that was not the purpose in issuing them.

Right here the reader, if he is a county superintendent, will say that his county board will not allow him to issue an illustrated annual report of 6,000 copies at a cost of \$1,000. Neither would mine when I began. My first attempt was a booklet, costing about \$25, of about 200 copies for vestpocket use. This was in 1899. The one for 1900 cost a little more; the one for 1901 had a few pictures in it; the 1902 report, more fully illustrated, cost \$442 for 3,000 copies. From then on the reports increased in quality and price. The board said in effect that since I was securing results I should not be hampered so far as the use of the printing-press and camera were concerned, so long as I kept within reasonable limits. At one time a member of the county board on plea of economy made a motion that the county superintendent be limited to \$600 in the preparation of his annual report. After a thorough discussion this was lost by a vote of 18 to 9. The reader will pardon this detail. But the use of the printing-press and the camera must come as a gradual growth to show IMPROVED CONDITIONS THROUGH THE COUNTRY SCHOOLS OF THE COUNTY. When a board of supervisors sees results then one can count on its reasonable support. No county superintendent should ask for more. And there are coming to my desk from time to time annual reports, illustrated, from various county superintendents of the United States, showing that other county boards are co-operating in this respect.

I make much use, as indicated above, of the stereopticon. I have

nearly 1,000 lantern slides, many of them beautifully colored to illustrate beautifying school grounds in the matter of planting trees, flowers, shrubs, vines; school-garden work; schoolroom decoration and sanitation; consolidation; agricultural education; better country-home conditions, etc. These are used at parents' meetings, teachers' institutes, and farmers' institutes throughout the county. Our annual teachers' institute is held the last week of March. Many plans are made during that week and much material is distributed. These teachers go right into their schools at the close of the week's institute and begin to do some of the things talked about during the week. We have had a traveling art exhibit—one of the Horace K. Turner traveling exhibits of Boston—at several of our weekly teachers' institutes. These have enabled teachers to study pictures and thus know better how to select a good picture for the schoolroom. We have had reading courses on picture-study. Burrage and Bailey's *School Sanitation and Decoration* was studied one year, and copies of the books have been put into our traveling libraries.

Books of both outdoor and indoor art, well illustrated, have gone into our traveling libraries for the country schools. We now have 112 boxes of books, representing 7,100 volumes, costing \$3,800. It is not my task to write about the traveling library as a means of increasing the usefulness of the country school as a social center. In addition to the 112 traveling libraries, over 8,000 volumes have been put into the local school libraries. Of course we should study Nature, in landscape, cloud, sky, stream, and roadside, for a keener appreciation of beauty. But books can help us to appreciate the out-of-doors. And every child who reads six books under the direction of the teacher is given a library diploma at our township graduation exercises held in each township in June. Here is the opportunity to train a rising generation to be better readers. So good books on the general subjects of planting grounds and decorating schoolrooms, and bound volumes of such magazines as *Country Life in America*, are placed in our traveling libraries and thus are proving valuable means of developing an appreciation of good things. The taste for better things is being created through both the natural world surrounding the child and through books. The full fruition of this work will come of course when the children of today become the men and women of a better tomorrow in country life. It takes about a generation to change the ideals of the people along these lines.

Our township graduation exercises bring the patrons and schools of the township together and are surely developing a greater interest in the matter of school improvement. Ofttimes the programs, wholly or in part, are planned to emphasize important phases of outdoor and indoor art. These are social as well as educational occasions. More of a unity is becoming apparent. One cannot state specifically just how many trees were planted, or how many pictures were placed in schoolrooms, or whether this board of directors tinted the walls of this particular schoolroom because of an emphasis placed on these things by the children in their program at the Town Hall last June. But anyway such things are following after.

In this matter of developing art appreciation for the country school too much emphasis, it seems to me, cannot be placed upon the value of educational work with the teachers in teachers' meetings and the annual institute. Mention was made above of a traveling art exhibit at the annual teachers' institute the last week of March. In addition to the several thousand dollars worth of reproductions of the pictures of the world's best painters hanging on the walls of the high-school building where the institute was held, there were many books on art and artists. These books were loaned by the Rockford City Library for use during the entire week of the institute. One period a day was set aside for library reading and picture-study. Another period was used by the county superintendent in talks about certain pictures, their proper framing and adaptability to the schoolroom. It would consume too much space to give that list of books here. Some of those books and newer ones, as stated above, have been put into our traveling libraries to help the teachers carry out the picture-study outlined for each month in the Illinois Course of Study used in our country schools.

In addition to my illustrated annual report of 100 pages which goes into every country and village home of the county, many illustrated articles were prepared by me and run in the local newspapers. One must say the same thing over several times in this matter of developing new educational sentiment for a better country school—say it, of course, in a new and more striking way if possible. Simply circularizing the school directors once or calling the attention of the teachers once or twice to a subject will accomplish but little. This has been my experience. But the matter has been emphasized again and again and again during the past twelve years. I shall expect to repeat for the next

four years; not exactly "repeat," but present the same claims in a newer and more forcible way if possible.

The articles, illustrated of course, as a picture is so effective, cover such subjects as "School Sanitation and Decoration"; "Results in School-Garden Work"; "Course in Art Reading"; "Beauty in Schools"; "Some Educational Forces in the Country School"; "Art in the School-room"; "Beautifying the School Houses"; "Prizes for Neat School Grounds"; "Gardens and Trees for District Schools"; "Outdoor Art for Home and School"; "Art Collection at the High School," etc.

The landscape department of the Illinois College of Agriculture has prepared planting plans for our country-school grounds. These designs set forth in picture the best principles of planting, or the A, B, C of beauty, viz., "A," leave open spaces; "B," plant in masses; "C," avoid straight lines. These planting plans are run in my annual reports and the local press, together with views of grounds planted on this scheme after several years' growth. Slides are also made of these plans and used at teachers' meetings, farmers' institute meetings, etc. The Consolidated School at Seward in this county, the first one in Illinois, has a large school ground of nearly four acres. This is being planted according to plan. Much has been done and much remains to be done. This outdoor art does not come in sixty or ninety days. It is a growth, and the fuller fruition will come when the children of today become the forces of a better tomorrow in country life. Mr. Horace K. Turner, of Boston, donated several hundred dollars worth of fine pictures and casts for the Seward School.

A second consolidated school has been built in Winnegabo County. This is a \$17,000 building on three acres of ground. In conversation with the president of the school board the other day he said the grounds must be beautified next spring according to some definite plan. So the taste is growing. That there is *growth* is the most comforting thing to me, no matter if results are slow at first or first attempts are not up to the superintendent's finest ideals. In this second consolidated school the school board will treat the walls with good color and give a good treatment in color to the woodwork. Pictures will come in due time. This will serve as an education in interior decoration for the country homes. It was my pleasure last week to take several interior views of a country home recently erected. It would rejoice the reader to see the decoration in color of that farmer's home. Colored lantern slides will be made of these views to show other farmers how it is possible to have

the artistic country home out in the open country beside the country road.

Mention was made of outdoor art being emphasized at our township graduation exercises. As a concrete example the program for Rockford Township is given here. Typewritten material was furnished to the program committee for part of the numbers. The names of pupils are omitted.

1. Piano solo—The Alpine Storm.
2. The White Oak.
3. The Vine on the School House.
4. Vocal solo.
5. Improvement of School Grounds.
6. Plant Trees and Protect the Birds.
7. Seed-planting.
8. Cornet solo.
9. Short talk by State Superintendent.
10. Arbor Day.
11. Piano solo.
12. How Do Robins Build Their Nests?
13. The Flower Mission.
14. Garden Drill (twelve pupils).
15. Arbor Day song.
16. The Little Brown Wren.
17. Cornet solo—The Holy City.
18. Arbor Day anthem.
19. Presentation of diplomas by County Superintendent.

My space is about all used. Now for a few results. Last June by actual count there were 2,763 living trees on 112 school grounds. The number of school grounds has been reduced by consolidation. Only one school ground is now without trees. Of these 2,763 trees it is impossible to say how many were planted during the last ten years, as no tree census was taken such as was taken in our library work. A conservative claim is that 1,000 of them have been planted. But trees are not the only things planted. This article does not call for a description of our school-garden work. The following reports are a few sent in by teachers each year. These are from my 1909 report.

“Two dozen trees set out, also three lilac bushes and several rose bushes.”

“Grounds cleaned, grape vines, ivy, and bittersweet planted.”

“Mudhole filled up, brush cleaned off, and rose bushes set out.”

"Set out twelve trees, eight wild grape vines, a clematis, a Boston ivy; outhouses screened and yard raked."

"Two outbuildings with screens. Clematis, Japanese hop vine, and wild cucumber planted."

"Grounds cleaned off; six trees and four rose bushes planted."

"Planted three ash, three elm, and seven box elder trees. Set Boston ivy along school building (stone), woodbine along back fence and closets. Also planted eleven Spirea Van Houttei, two weigelia, and eight lilacs."

The above is sufficient for illustrations of concrete work. If things die, why, set out again next year. Keeping everlastingly at it is the price of success.

Also by actual count teachers report 489 good pictures in the various schoolrooms. These pictures are not all of equal merit. But better subjects are being bought now than were purchased several years ago. The taste is improving. The following are a few from my 1909 report. During the last ten years a total of \$8,808 have been raised for pictures, books, and schoolroom furnishing.

"\$17.35 for books, pictures, and sash curtains."

"\$7.41 for a large picture of Lincoln, Emery's *How to Enjoy Pictures*, and for sash curtains."

"13 for a bust of Lincoln, two pictures, and books."

"\$34.36 for clock, picture, bust of Lincoln, chair, books."

"\$15.50 for books, new molding, construction material, picture and cast, the Lion of Lucerne."

"\$64.50 for organ, globe, and pictures."

"\$18.35 for organ, mirror, window shades, sash curtains, bust of Lincoln, wash basin, and drinking-cups."

A closing word with reference to parent-teacher associations as a means of creating new ideals. By all means have such an organization. Try to have the country people realize that the school belongs to them and they can have better conditions. The great problem, of course, is to get them to WANT better things.

V. ORGANIZED RECREATION IN RURAL SCHOOLS

MYRON T. SCUDDER

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GENERAL PRINCIPLES

When the rural school really finds itself it will pay much attention to wholesome indoor and outdoor recreation. There will be social evenings, lyceum activities, and clubs of various sorts; there will be the woodcraft and water sports of the Boy Scouts and Girl Scouts as well as the plays and games and contests of the playground and athletic field. All these things and more are included in the wider meaning of the words play and playground.

It has been suggested that the playground as it is now conceived ought to be called the "outdoor" school, for such it really is, while the meaning of the word play must be extended to include all means of passing one's leisure or recreation hours.

Play is the rightful heritage of country children as well as of city children and to district schools as well as to graded schools we must look to see that these children come into their own.

An adequate program of play would include pleasurable outdoor and indoor occupation, for (a) homes, (b) day schools, (c) Sunday schools, (d) other social organizations, public and private, suitable for Sundays as well as for week days, adjusted to the season of the year, and adapted to the needs of (1) very little children, (2) children from eight to thirteen, (3) boys and girls in the adolescent period, (4) adults; sex as well as age being taken into account when necessary. The word play thus broadened brings us into the realm of kindergartens, manual-training departments, vacation schools, summer camps, boys' clubs, girls' clubs, nature-study clubs, camera clubs, collection clubs: it has to do with swimming, fishing, boating, skating, skeeing, and snow-shoeing; also with all forms of athletics; with the use of tools and implements, with the use of clay, plasticine, paper pulp, and putty for modeling; with the use of tops and marbles, bean-bags, balls and kites, stilts, toys, soap bubbles, cards, dissected maps, scrap books, and the

myriad other amusement materials, plays, and games which are the heritage of the human race, and without sharing in which no child can grow to complete manhood or womanhood, and no adult can live a cheerful, joyous, well-rounded-out life.

It must be borne in mind that play in the country is not so much to promote health as to develop the higher social instincts, to introduce another powerful centripetal factor into country life which will tend to counteract the expulsive features which have been so actively depopulating our rural districts. The country child does not play enough. His repertoire of games is surprisingly small and inadequate. If he would play more he would love the country better, see more beauty in it, feel the isolation less.

And he would play more if conditions were favorable, for unfortunately they are not favorable to play. He does not know how to play or what to play; his parents are usually out of sympathy with play; and in the country schools not only are his teachers as ignorant as himself in regard to these matters, but even if the child and the teacher *did* know, the school trustee would in many cases interpose objections and forbid any effort in the direction of organized play or athletics. Left to themselves only a comparatively few country districts will attempt to do anything. Initiative will have to come from the outside, but experience shows that with tactful persistence and with organized action considerable may be accomplished even in a short time.

A very important result of play in the country is the development of community spirit which is so seriously lacking in rural districts. There seems to be so little to hold people together. Social forces are centrifugal rather than centripetal. But once interest children in play, get them to organize teams, design and make a school banner, compose and learn a school cheer, adopt a distinctive athletic costume or even a celluloid button which is to be worn when they go to the next great play festival and compete with other schools, and there will be no lack of community spirit so far as the children are concerned, and the adult population will soon be catching something of it too.

As the school is the natural play center of the community, and as supervised play is the only really good kind of play, it follows that the teachers must be play leaders. It is a sorry fact that so few of them are interested, and that so few know how to play. This suggests that courses in play should be given in normal schools and in teachers' train-

ing classes, and that teachers' institutes and associations should take the matter up as practically as possible in their meetings. The country school teachers are handicapped because they are obliged to work almost single-handed. They must go to the grange for encouragement and assistance, and they will get it, too, for the grange has many wide-awake men and women who will gladly co-operate. The normal schools, too, and agricultural colleges must go to their aid, help lay out the grounds, perhaps construct some apparatus, teach new games, assist in conducting badge competition contests. Several of these institutions are already doing these things.

The most important factor in promoting play in the country is the Field Day and Play Festival, the great day of the year when the country schools of the district or township meet at some central point and pass the day in play. Since the first Field Day of this sort was started six years ago in New Paltz, N.Y., the idea has spread from ocean to ocean and it may be said that the Field Day and Play Festival has become an important rural institution in this country. This has been carefully described by the writer of this article in the little manual published by the Playground Association of America, *The Field Day and Play Picnic for Country Children*. Guided by this manual many of these occasions have been successfully administered in all parts of the United States.

The purpose of the discussion to this point has been to indicate the more obvious phases of the play propaganda in relation to these schools, to point out leads that may be followed up.

PRACTICAL EXPERIMENTS IN ORGANIZING RURAL-SCHOOL RECREATION

Six years ago the faculty of the State Normal School at New Paltz, N.Y., conceived the idea of holding Saturday conferences in neighboring country schools. Teachers, parents, and children were invited to attend and bring their lunches, and the local granges were always represented by some of their most influential members. The sessions were intensely practical, taking up such subjects as manual training, cooking, fruit farming, elementary agriculture in country schools, and so on, and finally came to the discussion of the physical and play life of country children. This aroused the greatest interest, and eventually resulted in the formation of the Country School Athletic League, organized to foster all kinds of clean athletics among country children, to teach them

and their teachers outdoor and indoor games, and to bring the schools together at least once a year in a great field day and play picnic. The athletic standards of the Public Schools Athletic League of New York City were adopted, and printed circulars announcing these were sent to each district and village school so that teachers might begin at once to interest their pupils in efforts to attain these standards. All who attained these standards were to be awarded a button, a gun-metal button for the first, a silver for the second, and a goldplate button for the third. These buttons were very handsome and were stamped with the design of a typical country schoolhouse with its American flag.

Blanks like the one shown on this page were sent to each teacher and aided in giving instruction as well as enabling the teacher to make proper records.

ATHLETIC BADGE COMPETITION

COUNTRY SCHOOL ATHLETIC LEAGUE, ULSTER COUNTY, N.Y.

Pupil.....W'gt.....Age.....Yr....Mo....Da....School.....

Events	Required Standard	Actual Record	Date	Regulations
Boys under 13— Chinning.....	4 times	<p>This competition is to take place at each school under the direction of the teacher and a representative of the central committee.</p> <p>Only those whose deportment and scholarship are satisfactory may compete.</p> <p>Boys may run barefoot.</p> <p><i>Only winners of an athletic badge or button are eligible to enter the field day championship events.</i></p> <p>There shall be but <i>two trials</i> in chinning, <i>two</i> in the dashes, and <i>three</i> in the jumps.</p> <p><i>Chinning.</i>—The boy must extend himself full length, arms straight, before and after each pull up: he must bring his chin fairly over the bar each time.</p> <p>The feet must not touch the floor or ground.</p> <p><i>Jumping.</i>—(See rules XXV and XXVII, <i>Official Handbook</i>, P.S. A.L.)</p> <p><i>Running.</i>—(See rule VIII.)</p>
Standing broad jump	5 ft. 9 in.	.....	.....
60-yards dash.	8 3-5 sec.	.....	.....
Boys under 15— Chinning.....	6 times ..	.....	.....
Standing broad jump	6 ft. 6 in.	.....	.....
100-yards dash	14 sec.	.....	.....
Boys under 21— Chinning.....	9 times	.....	.....
Running high jump..	4 ft. 4 in.	.....	.....
220-yards dash.....	28 sec.	.....	.....
Teacher				
For Central Committee				

A number of games like prisoner's base, captain's ball, and some relay races were written so clearly that anyone could understand them, illustrated with cuts, and published in a village paper, copies of which were sent broadcast throughout the country.

Circular letters giving lists of books on games and athletics, and other important particulars were sent to all teachers, and to further aid the play propaganda teachers from the normal school and students, too, went to country schools if asked to do so, to teach games, help with the badge competition contests, and assist at field days.

Individual schools were encouraged to have their own field days, and groups of three or four schools were urged to have an annual meet.

In furtherance of the play movement, the matter was presented by the normal-school principal at teachers' institutes, granges, and farmers' institutes by aid of the stereopticon and beautifully colored views. In one village a ladies' literary club was so impressed with the value of play for their children that they contributed a Giant Stride to the school.

Individual schools were encouraged to organize relay teams and teams to play prisoner's base, baseball, and other group games, and to compete with other schools. Great excitement prevailed one year when Pancake Hollow School challenged Butternut School to a match game of prisoner's base.

The climax of the year's activities came in June of every year, when all the schools were invited to a Play Festival held under the auspices of the normal school, as many as 4,000 people gathering to spend the day in the open air. This feature of the movement has been carefully described by the writer of this article in the above-mentioned manual, *The Field Day and Play Picnic for Country Children*.

A very important source of help to the promoters of this play movement, particularly of the Play Festivals, is the County Work Department of the Young Men's Christian Association. Indeed, most of the play propaganda in rural districts has been carried on under the County Work secretaries, and it is a splendid story we get from Ulster, Dutchess, Orange, and Rockland counties in New York State, from White River Junction in Vermont, and many other places where the Y.M.C.A. men are teaching and practicing the gospel of play among country boys.

At these field days the grounds were laid out for a variety of court games, and for archery, badminton, volley-ball, and tether-ball. Play-

ground slides, giant strides, merry-go-rounds, swings, teeter-totters, and other outdoor apparatus and appliances were conveniently placed about the grounds. There were also areas devoted to baseball and playground-ball, and many interesting games were taught

ENTRANCE BLANK

ANNUAL FIELD DAY AND PLAY PICNIC OF THE COUNTRY SCHOOLS OF ULSTER CO., N.Y.

School.....Pupil's Name.....

Pupil's age last Sept. 1.....Yrs.....Mos.....Days Pupil's present weight*

Check in this Column	80 lbs. Class (80 lbs. or less)	Check in this Column	95 lbs. Class (Not to Exceed 95 lbs.)
	50-yards dash		60-yards dash
	Running broad jump		Running high jump
	360-yards relay race		440-yards relay race
	115 lbs. Class (Not to Exceed 115 lbs.)		All Over 115 lbs. Class
	70-yards dash		100-yards dash
	8-lbs. shot-put		220-yards dash
	Running broad jump		12-lbs. shot-put
	880-yards relay race		Running high jump
			880-yards relay race

.....One-half mile run. One mile run. 120-yards hurdle race.
These events are open to any and all who hold buttons.

I also certify that this pupil's average in both scholarship and deportment is passing for the last quarter, or since Easter.

Date of filling this blank.....Principal

Check each event in which pupil wishes to enter. No pupil may enter in more than one (1) class, but may enter all events in that class. Pupil may not enter any class if his weight is in excess of the weight given for that class. All blanks must be in by June 1.

* Pupil should be weighed in the light clothing in which he is to compete. Boys may run barefoot.

the visiting children by the students of the normal school and the children in the training school. A day nursery was provided for the babies and was equipped with comfortable beds, tables, blocks, and games, also a generous sand-pile. A competent nurse was in charge. Drinking-water and toilet facilities were carefully provided,

benches to accommodate 1,500 people were placed around the play areas, consisting of boards stretched across berry crates, and a large tent was devoted to checking hats, coats, and parcels. The accompanying blank may interest those who are investigating the practical details of managing a field day in the country.

Perhaps it is not too much to say that through properly supervised play and through a series of properly conceived and well-conducted festivals the civic and institutional life of an entire county or district, and the lives of many individuals of all ages, may be permanently quickened and inspired, the play movement thus making surely for greater contentment, cleaner morals, and more intense patriotism and righteousness on the farm lands and in the village populations of our country.

VI. THE GENERAL PROBLEM OF THE RELATION OF THE RURAL SCHOOL TO COMMUNITY NEEDS—A SUMMARY

B. M. DAVIS

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The rural school of the early days, considering the needs of almost pioneer conditions, was efficient. It was efficient largely because it was closely linked with the life of the community in most of its interests. The men of the community turned out and together built the schoolhouse. The teacher was a member of the neighborhood group, literally living with them, for he generally spent part of the year in each home. Young men and women between the ages of sixteen and twenty-one attended the school. The weekly literary society and frequent "spelling-bees" contributed to the social life of the community with the school as the center.

Gradually the rural school has lost its hold upon the community. One by one the interests which brought the people and the school together have ceased. Along with these interests has disappeared much educational efficiency. But the traditions which grew up with the little one-room schoolhouse have persisted.

Not long ago the writer attended a mass meeting called for the purpose of considering the consolidation of a township system of schools. The meeting was held in a district schoolhouse which had been built some forty years ago. The house itself, with its much-mended walls, unjacketed stove, and general dilapidation, might have been regarded as a powerful argument for consolidation. The township was rich and prosperous, and conditions were apparently most favorable for the entire township to unite in securing a splendid consolidated school including a high school, in the place of several isolated struggling district schools and a one-room, one-teacher high school. Nearly all of the voting population of the district was present—an example of community interest. More men were assembled than had in years been brought together in this building for a common cause. But strange as it may seem, the common cause that brought them there was

to express an opposition to the proposed scheme. When one prosperous and influential farmer, a grandfather, stated that fifty years ago the district school was good enough for him, and that he could not see why it was not good enough for the children of today, there were many nods of approval. This man had, at considerable expense, been sending his grandchildren to the schools of a neighboring city, but somehow considered it his duty to venture out on a cold, wintry night to do his part in saving the district school.

This introduction contains nothing new, for everyone interested in rural education knows the situation. It is meant to emphasize two important considerations: one, that the success of the old-time rural school was not in its one room and one teacher, and the attention given to the three R's, but that its success was due rather to the hold it had upon the community. The other is the conservative attitude of the rural population toward any change affecting the present organization of the rural schools.

The problem of rural education is an important one. The Country Life Commission, that investigated almost everything concerning rural life, regarded the redirection of the rural schools as the most pressing need for the betterment of rural conditions. The findings of this committee simply add authority to what educators have long recognized. There is no difficulty in finding fault with the rural-school situation but there seems to be great difficulty in finding means to improve it. Various plans have been proposed and many readjustments have been undertaken, yet the general results are far from satisfactory.

Perhaps Professor E. C. Elliot was right in his conclusion that we do not yet really know what the rural-school problem is, and that the first step in solving the problem is to find it. Nevertheless the two points mentioned above are fairly clear. The practical question is how the community and the school may again be brought into closer union, and how the conservatism that has so hedged about rural education may be broken down.

The contributions in this *Yearbook* to the discussion of the "Rural School as a Community Center" indicate that neither phase of the question is beyond solution. After reading accounts of what is actually being accomplished, one is encouraged in taking a more hopeful view of the situation. The evident success in several directions at least points out the way for further progress.

The remarkable influence of the Agricultural High School of Baltimore County, Maryland, on the life of the county cannot, of course, be duplicated in every farming community, for the obvious reason that it is impossible to secure such an equipment and such teachers without first securing a different attitude of the rural voting population toward education. But the fact that this school exists and is doing so much for its community will make it easier to bring other communities to the point of establishing similar schools.

There are now at least seventy-two of these agricultural high schools in this country, and they are all reported as doing excellent work. The degree of their success seems to be in direct proportion to the service they are rendering not only to the pupils in attendance, but to the community as a whole. The farmer is conservative not only in educational affairs but in other matters as well. For this reason, demonstration farms are the most successful form of extension work. He thinks in terms of agriculture, and generally estimates his values of things in dollars and cents. When he has his milk tested by the boys in the public school and is shown that some of his cows are losing him money, he gets a new light on education and assumes a new attitude toward the public school. No argument is as powerful as a simple service like this.

The value of participation by the school in the industrial life of an agricultural community has lately come to be recognized by city superintendents of schools where a considerable number of farmer boys are in attendance. Thus in Stockton, California, a department of agriculture was organized at the beginning of the present year. A director who is an agricultural expert has charge. He is not expected to teach more than one-third of his time; the rest of his time is to be devoted to the "study of the agricultural problems at first hand throughout the farm area tributary to Stockton." He is to take up any agricultural problem at any time, go to the farm, and help find a solution. "By this means the farmer might be reached directly and made to feel that our agricultural high-school course was their course and that our director and teachers were willing and able both to educate boys and girls for profitable farm life and cope with economic problems troublesome and burdensome to them." Short courses are also offered to farmers and those interested in agriculture who cannot take the full course. This work is in co-operation with the State Agricultural

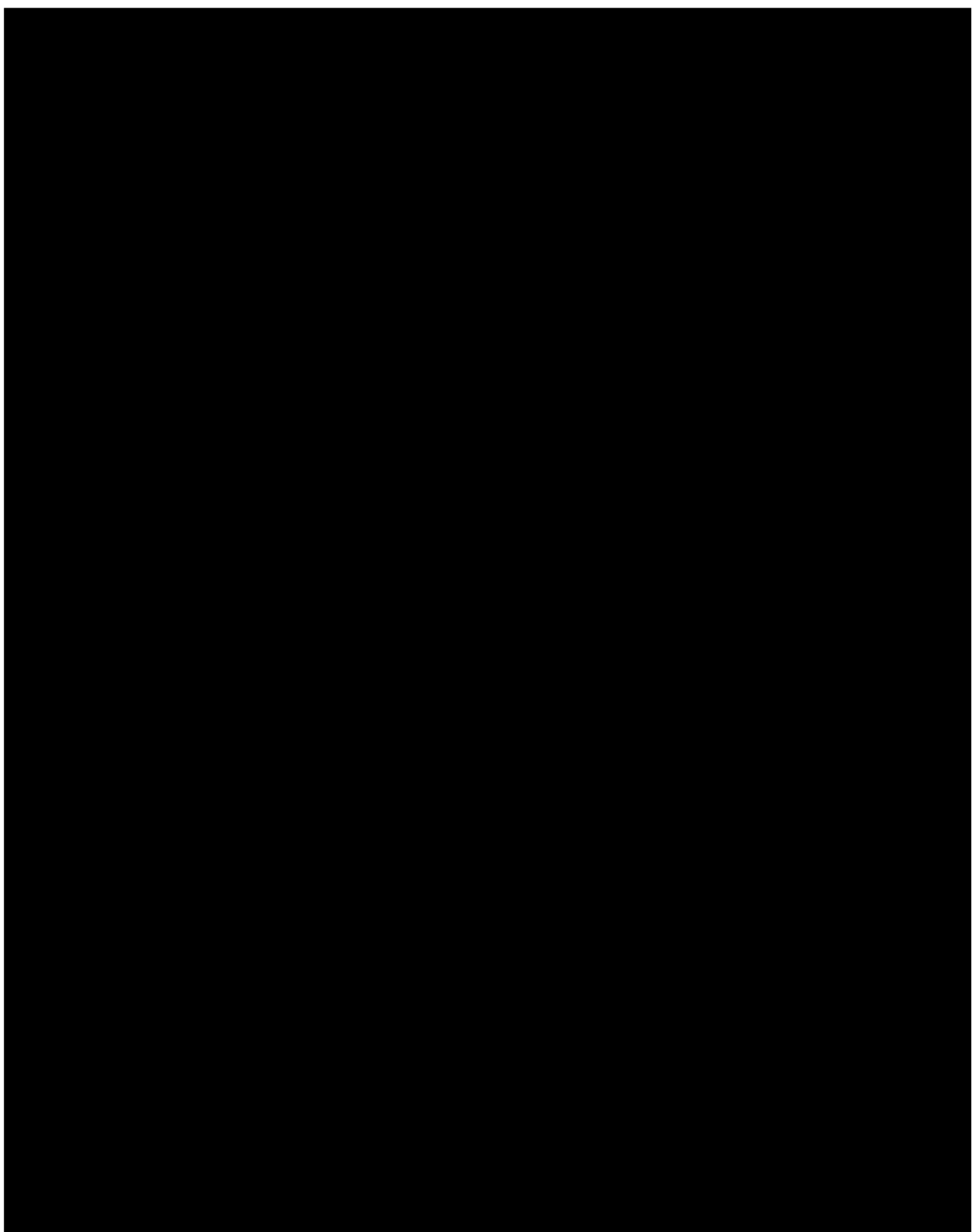
College. A course is offered to students who expect to be teachers with the view of providing the rural schools with teachers having a knowledge of, and sympathy with, farm life. Further aid is given the rural schools by a series of teachers' meetings and conferences with the director in charge. Joint institutes for teachers, farmers, and students are also planned. In addition to the experiment farm connected with the school, others are to be established in various parts of the adjacent farming country in co-operation with the State Agricultural Experiment Station, and also with the United States Department of Agriculture. In a similar manner the girls are provided for by means of suitable courses along the line of household arts.

Miss Field has shown by her work in the Page County (Iowa) schools the possibilities of improvement of the one-room type of school by bringing the school and community into closer touch. "Getting the people together" is the secret of her success. Few county superintendents have succeeded so well in an entire county system. But those who have succeeded have used similar methods, notably Cap E. Miller, Keokuk County (Iowa), Frank D. Joseph, Delaware County (Iowa), O. J. Kern, Winnebago County (Illinois), and a number of others.

One of the most important and far-reaching efforts for improving rural education has been through extension methods. Mr. Howe has given an excellent account of this work. Mention should be made of the fact that the movement, which (as he has described) has become statewide in Michigan, was initiated by him in Wexford County about three years ago.

The membership of boys' and girls' clubs was about 150,000 in 1909, and may be conservatively estimated at more than 300,000 in 1910. Plans are under way for introducing such clubs into several states not now having clubs. For example, the State Superintendent of Education of California strongly recommends their establishment in each county. In Kansas a new interest is being developed in boys' clubs by means of an organization known as the Rural Life Boy Scouts, following the general plan of the Boy Scouts of America. This organization is under the auspices of the Rural Educational Department of Kansas Agricultural College.

State Superintendent Bishop of Nebraska, co-operating with the State Agricultural College, has been particularly successful in giving the girls an equal opportunity with the boys in club contests and other



by the ugly prominence of its out-buildings and the neglect of its yard. The screens over the windows are marks of public indifference toward public property. Much of the vandalism resulting in defacing and injuring school buildings is due to an absence of a civic conscience. The time to arouse this conscience is in the school days, and the place is in the school, not by talking and lectures but by actual participation in material improvement. Superintendent Kern has probably done more to arouse an interest and pride in beautifying school property both indoors and out than any other man. His story of twelve years of work plainly indicates that the problem is by no means an easy one, but the results which he has secured show that such efforts are well worth while.

The use of the rural school as a recreation center offers possibilities for bringing the rural school and the rural community together that have as yet been little realized. It represents an extension of the playground movement into rural schools that is in its early stages of development, and promises to be an important factor not only in making the lives of the rural-school children better and happier, but in bringing the school and the homes into closer union. This form of social activity was started under the direction of the New Paltz (N.Y) State Normal School by Professor Scudder who was then president of the school. He has not only given an excellent general discussion of the educational value of the subject, but has furnished, at the request of the editor, a detailed account of just how the work was planned and carried out.

The agricultural high school, or country-life subjects taught in the high school, the better organization of county and township school systems, boys' and girls' agricultural clubs, school libraries, the beautifying of school grounds and buildings, encouragement of supervised play activities—all these bring the school and the community into closer relations. They furnish points of contact between the school and the community that are mutually helpful. The conservatism of the rural population towards any modification of existing school conditions disappears as soon as the old relation between school and community begins to be re-established. Getting started is the greatest difficulty. But a boys' corn club may be, as it often has been, a starting-point.

Students of rural education are generally agreed that the whole system must be redirected. One important factor in this redirection has been presented in the foregoing concrete instances of what is being

accomplished. These efforts may be regarded as the early stages of a redirected rural education. The problem of redirection is a difficult and complex one, with many factors. As has been said, the difficulties are more apparent than their solution. Lack of financial support, attitude of mind of the farming population due to lack of social contact, of self-culture and of public service, the increasing number of farm tenants (as high as 40 per cent in Ohio), poorly trained teachers, and inadequate school equipment are some of the initial difficulties in the way of general redirection.

Such work as has been described in this *Yearbook* furnishes excellent concrete data for further study of the problem. The secret of success of the work described seems to have been in bringing the school into touch with the community at as many points as possible, and by having the school relate itself to some form of helpful work that may be appreciated by the community. But what elements have these various activities in common that may be combined into a school organization best adapted to rural needs? To answer this question more data are needed, and with these data as a basis the whole problem of redirecting rural education may be investigated in a thoroughly scientific manner.

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CONSTITUTION¹

(Revision Proposed by the Executive Committee and Adopted in Chicago,
February, 1909)

ARTICLE I. *Name*.—The name of this Society shall be “National Society for the Study of Education.”

ART. II. *Object*.—Its purposes are to carry on the investigation and to promote the discussion of educational problems.

ART. III. *Membership*.—Section 1. There shall be three classes of members—active, associate, and honorary.

Sec. 2. Any person who is desirous of promoting the purposes of this Society is eligible to active membership and shall become a member on approval of the Executive Committee.

Sec. 3. Active members shall be entitled to hold office, to vote, and to participate in discussion.

Sec. 4. Associate members shall receive the publications of the Society, and may attend its meetings, but shall not be entitled to hold office, or to vote, or to take part in discussion.

Sec. 5. Honorary members shall be entitled to all the privileges of active members, with the exception of voting and holding office, and shall be exempt from the payment of dues.

A person may be elected to honorary membership by vote of the Society on nomination by the Executive Committee.

Sec. 6. The names of the active and honorary members shall be printed in the *Yearbook*.

Sec. 7. The annual dues for active members shall be \$2.00 and for associate members \$1.00.

¹ In Part I of the 1910 (Ninth) *Yearbook*, on p. 109, is printed a constitution headed “Revision Proposed by the Executive Committee.” It differs from the Constitution adopted in Chicago in two places, namely:

Art. III, sec. 2. The clause “and shall become a member on approval of the Executive Committee” is omitted.

Art. III, sec. 7. The annual dues for active members is stated as \$3.00 instead of \$2.00.

The present secretary was officially informed that this Constitution printed in the back of the 1910 *Yearbook* was adopted at Indianapolis. On this basis he sent statements to active members for \$3.00 dues for 1911. Since then, the question has been raised concerning the adoption of this revision at Indianapolis. If it was not adopted the active dues for 1911 should be \$2.00.

ART. IV. *Officers and Committees.*—Section 1. The officers of this Society shall be a president, a vice-president, a secretary-treasurer, an Executive Committee, and a Board of Trustees.

Sec. 2. The Executive Committee shall consist of the president and four other members of the Society.

Sec. 3. The president, vice-president, and secretary-treasurer shall serve for a term of one year. The other members of the Executive Committee shall serve for four years, one to be elected by the Society each year.

Sec. 4. The Executive Committee shall have general charge of the work of the Society, shall appoint the secretary-treasurer, and may, at its discretion, appoint an editor of the *Yearbook*.

Sec. 5. A Board of Trustees consisting of three members shall be elected by the Society for a term of three years, one to be elected each year.

The Board of Trustees shall be the custodian of the property of the Society, shall have power to make contracts, and shall audit all accounts of the Society and make an annual financial report.

Sec. 6. The method of electing officers shall be determined by the Society.

ART. V. *Publications.*—The Society shall publish *The Yearbook of the National Society for the Study of Education* and such supplements as the Executive Committee may provide for.

ART. VI. *Meetings.*—The Society shall hold its annual meetings at the time and place of the Department of Superintendence of the National Education Association. Other meetings may be held when authorized by the Society or by the Executive Committee.

ART. VII. *Amendments.*—This constitution may be amended at any annual meeting by a vote of two-thirds of voting members present.

MINUTES OF THE MEETING OF THE NATIONAL SOCIETY FOR THE STUDY OF EDUCATION

HELD IN ASSEMBLY HALL OF CLAYPOOL HOTEL, EIGHT O'CLOCK, MONDAY
EVENING, FEBRUARY 28, 1910

President McKenny in the Chair

J. Stanley Brown, Temporary Secretary

The author of the *Yearbook*, Dr. Thomas Denison Wood, presented a clear, incisive résumé of the book, which called forth a large number of questions from a score of members. Among those who participated in the questions and discussions which followed Dr. Wood's introduction, were Dr. Helen C. Putnam, of Providence, R.I.; Dr. Ida C. Bender, Buffalo, N.Y.; Principal Grace Reed, of Chicago, and others.

Dr. Henry Suzzallo of Columbia University gathered up the threads of the discussion in an admirable fifteen minutes' address at the close of the meeting. The meeting was attended by about two hundred, and exhibited a goodly amount of enthusiasm. Before adjournment, the president appointed H. E. Kratz, Calumet, Mich.; Henry Suzzallo, Columbia University, N.Y.; John Kirk, Missouri; David Felmley, Illinois, and F. E. Farrington, of Texas, to act as nominating committee. The meeting then adjourned to come together again at four o'clock, March 2, in the Club Room of the Claypool Hotel.

After the reading of the minutes and their approval, the new members were voted upon, and Mr. Miller, representing the University of Chicago Press, made a statement of the financial condition of the society. On motion of Mr. Farrington, a new list of members, including all up to the date of its making, is to be made and incorporated in the present *Yearbook* and sent to all of the active members of the society. It was agreed that the policy of the society touching the number and contents of the yearbooks be committed to the Executive Committee.

By motion the Board of Trustees was empowered to make a contract with the Teachers College of Columbia University for the provision of one thousand copies of the *Yearbook*.

The Executive Committee elected as permanent secretary and treasurer Mr. Samuel Chester Parker of the University of Chicago, and on motion the president and secretary were authorized to secure an editorial committee for the *Tenth Yearbook*, and to take steps to issue Part Two of the *Ninth Yearbook*.

The committee on nominations reported for officers for the year 1910-11:

For President, C. F. Carroll, Rochester, N.Y.

For member of Executive Committee to succeed Mr. Carroll, President Charles McKenny, Milwaukee, Wis.

For Trustee for three years, Mr. M. J. Holmes, Normal, Ill.

For Trustee for two years, Dr. Charles H. Judd, University of Chicago.

The report of this committee was accepted, and the nominees duly elected.

CHARLES MCKENNY, *President*

J. STANLEY BROWN, *Secretary-Treasurer*

THE ELEVENTH YEARBOOK

OF THE

NATIONAL SOCIETY FOR THE STUDY OF EDUCATION

PART I

INDUSTRIAL EDUCATION: TYPICAL EX- PERIMENTS DESCRIBED AND INTERPRETED

BY

F. M. LEAVITT, G. A. MIRICK, M. W. MURRAY,
J. F. BARKER, H. B. WILSON, C. F. PERRY, A. L. SAFFORD, P. JOHNSTON
M. BLOOMFIELD, B. W. JOHNSON

Edited by S. CHESTER PARKER, Secretary

THIS YEARBOOK WILL BE DISCUSSED AT THE ST. LOUIS MEETING OF THE
NATIONAL SOCIETY, MONDAY, FEBRUARY 26, 1912, 8:00 P.M.

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PREFACE

At the Mobile meeting of the National Society for the Study of Education, it was decided that one of the 1912 Yearbooks of the Society should be devoted to a discussion of the actual progress that is being made in organizing schools for industrial education, and to an interpretation of the various lines of experimentation which are being undertaken.

In recent years there have been many notable discussions of the social and theoretical justification for industrial education. Perhaps the best known of these discussions, because of its wide circulation, as well as its thoroughness, is the report of the Committee on the Place of Industries in Public Education, made to the National Education Association in 1910. In spite of this widespread general discussion, however, there are many educators (who are not specialists in industrial education) who are not aware of what is actually being done to solve the problems which have been so thoroughly analyzed in print. Even among the leaders in industrial education, some of those in New England are not informed concerning the work being done in the Mississippi Valley, and vice versa; and many are totally ignorant of what is being done on the Pacific Coast. Some of the contributors to this *Yearbook*, who are firm believers in the special plans which they describe and have been successfully engaged in organizing, have expressed their surprise at their failure to locate other examples of the same type of undertaking. Further evidence of this overplus of theorizing, coupled with a dearth of concrete evidence, is found in some of the books on industrial education which exhibit considerable ignorance of real experiments while they elaborate at length on purely paper schemes for industrial education.

To carry out the plan adopted at Mobile, the Secretary secured the assistance of Professor F. M. Leavitt, of the department of Fine and Industrial Arts of the University of Chicago. Professor Leavitt kindly classified the experiments which are being tried, as shown in the Table of Contents, suggested as many examples as he knew, and assisted in securing contributors. Each contributor was requested, first, to describe in some detail the history, organization, and results of the particular school with which he is connected as the best example of the type; second, to compare it with other schools of the same type; and

third, to show how his particular type of undertaking contributes to a solution of the problem of industrial education. The various contributors have carried out these suggestions with different degrees of emphasis; some have described their own undertaking primarily, others have described and compared other examples at length, while some have emphasized primarily the element of interpretation. In all cases, however, the contributions carry out the plan of demonstrating practical possibilities instead of merely advancing theoretical suggestions.

I. CLASSIFICATION OF PLANS FOR INDUSTRIAL TRAINING

FRANK MITCHELL LEAVITT

Associate Professor of Industrial Education, The University of Chicago

When one attempts to interpret the significance of the numerous industrial or other so-called vocational schools which have been organized in the past decade, he encounters the difficulty of clearly differentiating the several examples studied. The names of the various schools do not serve to classify them as do the terms "Elementary School," "High School," "College," "University," or even "Commercial School," "Agricultural College," "Engineering School," and the like.

We find these schools variously named; for example, Elementary Industrial School, Elementary Technical School, Semi-Industrial School, Independent Industrial School, Trade School, Pre-Apprentice School, Vocational School, Special Industrial School, Technical High School, etc.

An examination of the courses of study and plans of organization of these schools shows that they merge and overlap in a way which defies absolute certainty in classification. Classification, however, there must be, and a brief description or defense of the one employed in this volume is here given.

In attempting to differentiate these schools, one comes to realize that most of them are dominated or controlled by a very definite purpose. Perhaps nothing serves better to distinguish all of these schools from our traditional educational institutions than the singleness of purpose with which they are administered, and the classification here made is based on the fundamental purposes of the different types of schools studied.

One further generalization may be made, namely, that in attempting to meet the very definite demand for training which is motivated by vocational purpose, two rather distinct types of endeavor are to be observed, one within the present school system and the other in a measure outside of, if parallel to, the existing schools. Generally speaking, the prevocational schools, and vocational high schools fall under the first classification, while the separate industrial schools and the trade schools come under the second.

PREVOCATIONAL INDUSTRIAL TRAINING IN THE SEVENTH AND EIGHTH GRADES

The purpose of prevocational work seems to be to secure the revision of the course of study in the upper elementary grades, both as to content and method, in order that the work given therein may appeal to those children whose vocational interests are drawing them away from the school altogether, and at a time when their education is extremely limited and fragmentary.

The schools employ the vocational motive as a strong incentive to hold the children in school, and secondarily as a vitalizing principle in determining the subject-matter of the course of study. These courses of study are not intended to deprive boys and girls of further education in the higher schools, but, on the contrary, they are intended to prolong the school life of the pupils and possibly to furnish another approach to the high school.

In order fully to understand the schools of this type, it is necessary for one to appreciate this double purpose of prevocational work. The word "vocational" serves in one case to describe the end of the education given, and in the other to indicate the interest which is utilized as an impelling force. These schools have invariably been an integral part of the school system, articulating with it in the most natural way, and they have eliminated nothing of the general culture which is commonly included in the work of the upper elementary grades.

INTERMEDIATE, INDEPENDENT, OR SEPARATE INDUSTRIAL SCHOOLS

While these schools have much in common with the prevocational schools, there is one radical difference. They do not commonly prepare their pupils for high schools. They are intended particularly for boys and girls who, having arrived at the age of fourteen, find themselves out of harmony with schools and school purposes, as they see them, and who would, failing this opportunity, probably enter immediately into industrial life. They are to a degree separate from both elementary and secondary schools, and independent of their domination. While these schools occasionally offer four years of work, few children entering them desire more than a short-term trade course. The work of the school, therefore, is made to appeal directly and immediately to the vocational interests of the children, and this interest is made the central and pre-

dominant factor in the school. Cultural work is given, but the proportion of time devoted to it is generally less than in prevocational schools. No scholastic requirements for admission are made in most instances, the age of fourteen years constituting the only necessary qualification. Schools of this type have been most needed where traditional education has been strongly entrenched and is unyielding to the needs of the future industrial workers. In some instances, where the economic needs of the pupils have been great, the bookwork has been reduced to a minimum, and the preparation for immediate industrial efficiency has been made the first consideration. Generally, however, every possible effort is made to include something of an inspirational and refining nature in the course of study.

THE VOCATIONAL HIGH SCHOOL

The vocational high school retains many if not most of the features of the traditional high school. It admits pupils only after the completion of the work of the eight elementary grades, and seeks to advance them along general educational lines, giving, however, the maximum amount of training in vocational subjects possible without jeopardizing the pupil's opportunity for advanced training in higher institutions of learning.

The vocational high school differs from the traditional high school in its attitude toward the pupil who cannot take the complete course but who desires to specialize in one of the practical arts and to prepare for early entry into vocational life. The work is therefore carefully adapted to those who can spend but two years in the high school. Four-year courses are offered, however, and very commonly followed by the pupils. In the last year intensive work in the technique of one trade or vocation is often permitted.

Thus the important characteristics of these schools are: early attention to vocational subjects, opportunity for immediate differentiation, for specialization, and, when elected, for considerable practice in trade technique. More attention to the related science and art of the trade or vocation is given in the vocational high school than in the prevocational work of the grades or in the separate industrial school, and, quite naturally, greater stress is laid on the value of the so-called cultural studies.

THE TRADE SCHOOL

Neither the prevocational school, the separate industrial school, nor the vocational high school claims to *teach a trade*. The trade school, generally speaking, does not claim to teach anything else. It is a "finishing" school and the pupil enters it only when he has determined what occupation he desires to follow. What the law school is to the lawyer, or the normal school is to the teacher, the trade school is to the young man or woman who has definitely determined to fit himself or herself for some chosen industrial position.

Usually the only requirement for admission is an age requirement, generally sixteen years of age or over, and it is not uncommon to find among the pupils in the trade school great variety in previous schooling. In the trade school may be seen high-school graduates, elementary-school graduates, and those who have not passed the fifth elementary grade.

The purpose of these schools is always clearly defined. They are intended to be thoroughly "practical" and to concentrate on the development of special skill and speed in the technique of a specific trade, and to give considerable actual experience in shop processes and shop methods of production.

The trade school is not articulated in any important way with the school system, for, while it may receive pupils from prevocational or separate industrial schools, the preparation given in these schools is not demanded for admission, and the school does not fit its pupils for some higher institution, but seeks to prepare them for a particular place in the industrial world.

THE PART-TIME CO-OPERATIVE PLAN

The part-time co-operative plan recognizes the fact that one may be educated *by* his work as well as *for* his work; it further recognizes that the desirable combination of work and study which was formerly possible for large numbers of children and youths is today well-nigh impossible without a carefully planned scheme of co-operation between the employers and the schools. The plan further recognizes that there is nothing more unfortunate in our social order than the necessity which confronts so many children of choosing between *all school* and *all work* at an early age.

The plan contemplates an arrangement of school program and shop employment whereby the pupil gains practical shop experience by working for an employer, and systematic instruction in the science and art of the industry in the courses offered in the school. The pupils work in the school and in the shop during alternate and equal periods, usually weekly, and receive wages from their employers while in the shop.

While the plan is capable of wide application, it should be noted that it cannot take the place of, or in any way render unnecessary, the other types of vocational schools included in this study, since the opportunities offered by it are limited to the number of co-operating employers and shop positions which the school authorities can secure. In some instances only a small percentage of the pupils who apply for such opportunities can be received. It is obvious that the public school must be more inclusive in its program.

THE CONTINUATION SCHOOL

The continuation school also depends upon co-operation between the employer and the school. A minimum amount of time, however, is devoted to the school work, generally from four to eight hours a week.

The co-operative schools organized on the half-time basis are planned for those who are still in the school system but who are feeling the pressure of economic conditions, or the urge of real life. The continuation school, on the other hand, is planned for those outside of the system, and already engaged in gainful occupations.

Pupils who have severed their connection with the schools without completing even the work of the elementary grades are induced to spend from four to eight hours a week in school, either continuing the regular grade work, or studying some phase of the vocational work in which they are engaged. The first schools of this type in the United States were held in the evening, but recently school authorities have endeavored to secure the co-operation of employers, and to provide for such instruction within the limits of the working day. In two states laws have been enacted which, under certain conditions, require the employers to permit children in their employ, who are between the ages of fourteen and sixteen years, to attend such schools without loss of pay.

These schools are more inclusive than the half-time co-operative schools, since provision can readily be made for all who desire or may be required to take the instruction provided.

VOCATIONAL GUIDANCE

Vocational guidance is a necessary corollary of vocational education, and the ultimate success of either one will depend upon the ability of the school system to furnish some measure of the other.

When the ideal of the school was to furnish an identical education for all children there was no need for guidance within the school, and there was little or no information within the school organization to insure the giving of intelligent advice regarding the major portion of the vocational field. Such advice as was given was generally confined to those who were fitting for professional life.

But with the widening of the educational horizon, and the broadening of the school's sympathy and interest, and especially with the wide opportunity for differentiation of purpose and method to be found in the schools, the absolute need for intelligent direction within the school, and for wise council and immediate assistance on entering upon vocational work, becomes apparent.

Vocational guidance, therefore, may concern itself with the choice of schools and curricula within the school system, with the minimizing of the difficulties and dangers attending the transition from school to work, or with the council and advice so frequently needed after the young worker has actually entered upon his work to keep him steadfast in his efforts and to induce him to continue, wherever necessary, some line of related study or practice.

II. PREVOCATIONAL INDUSTRIAL TRAINING IN THE SEVENTH AND EIGHTH GRADES

GEORGE A. MIRICK
Acting Superintendent of Schools, Indianapolis, Ind.

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| 1. Introduction | 6. Newark |
| 2. Indianapolis | 7. Lists of Activities |
| 3. Boston: North Bennett St. Industrial School | 8. Points of Agreement and Difference, Cost |
| 4. Cleveland | 9. General Principles |
| 5. St. Paul | 10. Conclusion |

INTRODUCTION

The general content and method of this report was determined by the Secretary of the National Society for the Study of Education. He specified that it should be an "account of what has actually been accomplished" in prevocational industrial training in the seventh and eighth grades—that this accomplishment should be shown (a) by "a history descriptive of the organization, work, and results" in Indianapolis; (b) "by comparing the work of the Indianapolis schools with that of Boston (North Bennett Street Industrial School), Cleveland, St. Paul, and Newark, N.J."; (c) "by an interpretation of the type in terms of a statement of the way in which it meets the needs of the educational situation."

INDIANAPOLIS

A more extended report than can be made here may be found in the *Proceedings of the Western Drawing and Manual Training Association*, May, 1911.

Briefly, this program was started by Dr. C. N. Kendall, then superintendent of schools, in the department of one school. (In Indianapolis all seventh and eighth grades are organized on the department plan.) This program was started as an experiment to determine if the educational needs of a body of seventh- and eighth-grade boys and girls, made up largely of the non-book-minded, could be more fully met by a course of school work consisting of activities fundamental in the industries for one-third to one-half of the school time and of book-study for the balance of the time. The activities and the book were to be so related that the

one should support and vitalize the other, but in a way to retain all the values that we have been accustomed to believe inhere in the inherited book curriculum.

Character.—This “semi-industrial” course of study is, and is not, “vocational.”

It is not vocational, in that no effort is made to have the pupils choose a specific line of work with the purpose in view of going into that as a business after they leave school. All the boys follow the same course of industrial work and all the girls the same course of industrial work. Boys and girls recite in separate classes except in the subjects that do not relate to the “activities.” The purpose is to make the industrial work broad in its scope, but to carry each activity far enough to give an opportunity for the acquisition of sufficient skill to give satisfaction to the worker. On completing this course the pupils have the same opportunity that the graduates of other grammar schools have of entering either of the two high schools.

This course, while not vocational in the sense that it involves an early choice of a life-work, is vocational in at least three senses:

1. It is vocational in the sense that the methods of work followed in the various industrial activities are those followed in up-to-date industrial concerns, and the tools used are those used today in these industries. The mechanical habits and the industrial points of view would, it is assumed, “carry over” into similar occupations outside the school.

2. It is vocational in the sense that the commercial standard of quality in the product is made the school standard of quality. This standard, however, is kept in a subordinate place, as the product in school is an educational means, not a money-making end.

3. The semi-industrial course is vocational in the sense that through it the pupils gain a first-hand knowledge of the elements of various occupations and learn something of the possibilities and of the outcome of these occupations. They should become more intelligent in their final choice of an occupation. A part of the time devoted to industrial work is given up to repair work and to making things used in the schools. Several hundred dollars a year are saved to the school funds in this way. A part of the time is given to making things for personal use or for sale. The making of these things is not an “extra” but is made a part of each line of work.

Motives.—The new plan of study not only involved industrial activities to meet the tastes and aptitudes and possible later economic needs of pupils, but it involved also a more varied appeal to interests and furnished a greater variety of motives. Any interest or motive that will keep a boy or girl hard at work is considered legitimate.

Teachers.—The teacher is a most important factor in the semi-industrial school problem. The school training of a majority of teachers unfits them to deal with a course of work based on practical application and with an educational process in which the pupil's point of view, tastes, aptitudes, and capacities are to take precedence over her own. The shopmen, the sewing-teachers, and the cooking-teachers have all had some work in the "trades," but not as much as is desirable. The academic teachers are all conscious of the need of relating the book to the activity, and some progress is being made. Some teachers have confessed an inability to adapt themselves to the new program and they have been replaced by others. On the other hand, this new work has appealed strongly to some teachers. It has opened up a new field of usefulness to them, and they have been glad to take summer courses in order more adequately to fit themselves to take up this work.

Inasmuch as the central idea of this semi-industrial program is that the "activities" are an inherent part of the course and not an "extra," it follows that the teachers in charge of the "activities" and the teachers in charge of the books shall form one body. It also follows that not as many book teachers are needed. This year one "book" teacher has been dispensed with in each department by giving to one teacher, specially trained in each subject, the sewing and girls' artwork. This teacher is also competent to teach one or more other subjects. It would be an ideal arrangement to have the teacher of English also teach the printing. However, no English teacher has had practical printing experience.

Pupils.—Almost exclusively, the pupils are of the seventh and eighth grades. The course is not optional in the schools in which it has been placed. No pupils have asked for transfer to buildings where the "book" courses prevail. One school is so situated that it can receive pupils from other buildings. From five to fifteen such boys are received each term. So far the girls have preferred to stay at the home school.

A few overaged boys from the sixth grade have been advanced to the seventh-grade semi-industrial work. They are able to maintain their advanced standing.

Curriculum.—

SEMI-INDUSTRIAL SCHOOLS

(Departmental)

SEVENTH AND EIGHTH YEARS

The following general program is supplemented by a more definite statement regarding the different subjects.

I. THEORY

Subject	Number of Exercises per Week	Minutes per Week
English.....	..	240
1. Composition (dictation).....	..	..
2. Reading.....	..	..
3. Spelling.....	..	..
Word-study.....	..	..
4. Grammar.....	?	..
Mathematics.....	4	120
Geography, history, civics.....	3	90
Hygiene.....	1	30
Penmanship.....	?	..
Music.....	..	60
		<hr/>
		540

II. PRACTICE

(A) Boys.....	..	490
1. Shop.....	..	..
(a) Benchwork; (b) mechanical drawing and designing (90 minutes).....	..	..
2. Printing.....	..	..
3. Iron-work.....	..	..
(B) Girls.....	..	490
1. Home economics.....	..	..
(a) Cooking; (b) housekeeping; (c) sewing; (d) cleaning and dyeing of textiles; (e) weaving; (f) mechanical drawing and designing (90 minutes).....	..	..

III. STUDY, ETC.

Study.....	10	300
Opening exercises.....	5	50
Physical exercises.....	3	45
Recesses.....	5	75
		<hr/>
		465
		<hr/>
Total minutes in week.....		1,500

NOTES ON THE THEORY PART OF THE SEMI-INDUSTRIAL PROGRAM

ENGLISH

1. The time allotted to English may be divided so as to meet local needs.
2. Some reading should be done in connection with the industrial work, during the reading periods, in "Shop" and "Home Economic" time, and at home. Books should be read and discussed which throw light on the general industrial problem, which give information on the various available occupations, and which deal with specific materials used by the pupils.
3. The words for spelling should be not far in advance of the immediate needs of the pupils.
4. Grammar should be continued from the sixth grade incidental to composition. Special lessons should be given only as needed.

MATHEMATICS

1. The course of study laid down for the regular schools will be followed. The material for examples will, however, be drawn as far as possible from the work actually going on in the shop, sewing-room, and kitchen.
2. Shop records for labor time, quantity and cost of material, etc., will be kept under the direction of the industrial teachers.
3. Bookkeeping will be taught to the extent that it is actually needed in the conduct of the shop, sewing-room, and kitchen.

GEOGRAPHY AND HISTORY

Without neglecting the course of study laid down for the regular schools, the geography and history of industrial and commercial activities should be emphasized in the general reading and in the periods devoted to these subjects.

PENMANSHIP

Classes should be organized for those who need this work.

ACCESSORY

An excursion should be taken by each pupil at least once each term to a place where a phase of the world's work may be observed.

Pictures and lantern slides should be used for illustrations.

To interrelate the book and the activity is not easy. Some progress is being made. At present the heads of the departments of art, domestic science, and manual training are at work upon plans that promise well.

Guidance.—A graduate of one of the semi-industrial schools has the same opportunity as the graduates of other schools have of entering the high schools, either the Technical or the English-Latin. More guidance should be given all grammar-school graduates in their selection

of high-school courses than is at present given in Indianapolis, and more assistance should be given in entering industrial life. This field of choice the coming term, for the graduates of these semi-industrial schools, will be limited in a conference between the principals of the high schools and the principals of the grammar schools.

Results.—1. The plan being tried this year of giving advanced work to graduates of these semi-industrial schools at the home school is not proving a success. The classes returning for this work have in general been too small for economical handling, and it has been found that the elementary-school equipment has not met their needs. This “post-graduate” work will be discontinued at the close of this term. A special school is needed, if high-school work is to be done in a satisfactory and economical manner.

2. Without exception the boys and the boys’ parents accept this modified school work with enthusiasm. In general, the girls and their parents are glad to have a more practical turn given to the school work. There has been, however, now and then, on the part of one or more girls and their mothers, objection to “so much sewing and dish-washing.” In most cases the trouble has been found to lie in the fact that the work at these points was not really on a practical, worth-while basis. By placing the work in the hands of a teacher who had had more real “trade” experience the objection has disappeared. However, there may be here a real problem that should be recognized.

3. Experience so far confirms the suspicion held by many that for many of the boys and girls five hours a day spent on the study of the abstractions and the generalizations of knowledge is partly misspent. It appears to be generally true that classes and individuals are taking a higher rank in their book studies, as indicated by marks, and are showing a better understanding of these studies than they have formerly done. This phase of the matter resolves itself into the question, “How much time can a child spend efficiently on the study of books alone?”

4. The question just proposed must be carried from the “semi-industrial” school to the “regular” school. It is a sequence, perhaps, rather than a result that the supervising principal and the parents in two of the “best” sections of the city are taking up the study of the semi-industrial program, with the view of determining whether or not it is not in essence a more educational and more cultural program for all children. One of the schools in a similarly favorable district is introdu-

cing some handwork in weaving and pottery by request and partly at the expense of the "Parents' Club." The teaching is done by the regular teachers in school time.

Equipment.—It was early discovered that each "activity" must have its proper place in which its peculiar "atmosphere" could be created. For the boys there must be a wood-working room—with a place for staining and a place for machines; a room for the printing, and if metal-work were done, a special room for it with machines and a forge. For girls there are needed a kitchen, butler's pantry, and dining-room (en suite if possible), a laundry, a sewing-room with sewing-machines.

Machinery.—The introduction of machinery has been forced in the development of the plan of work. It has been found that both boys and girls are capable of using machines much earlier than it was suspected by some and it is not yet clear how far the educational needs of the children will push development in this direction.

BOSTON

North Bennett Street Industrial School.—This is a private enterprise, conducted "for educational and social improvement and for research and experiment in educational and social methods."

Full information may be found in the *Annual Reports* for 1909, 1910, 1911. These will be sent to anyone on application. They are most valuable contributions to the literature of the subject under consideration. This report is made up largely of extracts from these *Reports*.

Purpose.—The school is working to better the life of all members of the neighborhood. For children of compulsory school age it is trying:

1. To illustrate a possible modification of the upper grammar-school course which will be especially adapted to pupils who will leave school early to enter industrial pursuits.

2. To develop within the public school an increasingly vital form of manual training in several materials, sympathetically adapted to meet the fundamental instincts and interests of those to whom it applies, and so correlated with academic subjects as to cause these to function more certainly as elements in a liberal education.

3. To provide, after school hours, supplementary industrial work for members of public-school classes, and also such handwork as is adapted to children of school age or under who have no other opportunity for this training.

4. To develop spontaneous and wholesome recreational life through folk-dancing, music, and supervised play.

Foundation.—This organization was founded in 1880 and therefore has been for thirty years a pioneer in the lines of educational work enumerated.

Relation with public schools.—By arrangement with the Boston School Board sixty-five pupils, boys and girls, have been transferred from a near-by public school to this school for the last two years of their grammar-school work.

Plans are subject to the approval of the Board of Superintendents of the City of Boston. Pupils have been selected by the masters of the respective grammar schools in consultation with the director of the North Bennett Street Industrial School and the parents of the pupils. While it will be possible for these pupils to continue their education by taking a high-school course if they desire, the aim has been to select those who must go into industry early and so especially need this training. A special certificate will be issued to those who satisfactorily complete two years' work. The North Bennett Street Industrial School bears all expense of the experiment with the exception of furniture for the boys' classroom, and such of the textbooks in use in the city schools as are suitable for these classes.

COURSE OF STUDY—BOYS

FIRST YEAR		SECOND YEAR	
	Hours		Hours
<i>Shopwork—</i>		<i>Shopwork—</i>	
Wood—benchwork.....	6	Wood-turning, benchwork, and metal-work.....	6
Printing.....	2	Printing.....	2
Practical mathematics.....	3½	Practical mathematics and business forms.....	3
English literature and com- position.....	6	English literature and com- position.....	2
Geography and history.....	3½	Geography, history, and civics.....	3
Drawing, freehand and me- chanical.....	1½	Drawing, mechanical.....	2
Hygiene and personal habits.	½	Hygiene.....	½
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Total.....	22½	Total.....	22½

Fifteen minutes daily allowed for recess and fifteen for general exercises complete the schedule on the basis of a five-hour day.

“The industrial work consists of shopwork and printing. The most of the members of the class had not had woodwork when they entered, so it has not been found possible to deviate greatly from the usual forms of manual training. In addition to this, the pupils have done

pieces of repair-work about the building with one of their own number acting as foreman. It is the foreman's duty to keep account of each boy's time and the amount of material used, and to present at each session all data necessary for academic study. He also makes an estimate of each boy's ability and prepares a written criticism of his work. It is evident that no suitable textbooks or courses of study are available and that all the instruction involves original work and preparation on the part of the teacher.

"Arithmetic and drawing are developed in close correlation with shopwork. Much of the reading is selected from *Current Events*. The language-work, oral and written, is a discussion of current events, descriptions of shop processes, business letters, so that accuracy of speech will be appreciated. Lessons are given in spelling from lists of words occurring in the day's work. Geography is developed naturally from the shopwork to materials in use, the sources of the materials, means of transportation, and thence to the principal industries of Massachusetts and the steamboat lines and export trade from Boston. This, again, leads to the study of other countries, and questions of history and politics. The pupils are led out by observation of their own environment through the greater complexities of the industrial world, and made to feel that school work is a part of life.

"Outlines of lessons, specimens of work, lists of materials, etc., are kept on file, and copies are furnished on request. As practically none of the school systems that are attempting this form of instruction have made their material available, there has already been a considerable demand made upon us."

COURSE OF STUDY—GIRLS

FIRST YEAR		SECOND YEAR	
	Hours		Hours
Sewing, hand and machine, simple garment making, study of materials.	6	Sewing, hand and machine, simple garment making, and embroidery	6
Cooking and housekeeping	3	Cooking and housekeeping	3
Design	1	Design	1
Arithmetic	6	Arithmetic	4
Geography and history	3	Business conditions and methods	1½
Literature, composition, and spelling	4½	Civics	1½
Gymnastics and hygiene	1	Literature and composition . . .	4½
		Gymnastics and hygiene	1
Total	22½	Total	22½

Fifteen minutes daily allowed for recess and fifteen for general exercises.

These classes, like other public grammar schools of Boston, are in session from 9 A.M. to 12 M. and from 1:30 to 3:30 P.M. daily, except Saturday, with the usual vacations and holidays.

The sewing course is planned to meet the immediate needs of the girls as the work of the year is carried on: First, cooking-uniforms, towels, holders; then undergarments, shirtwaists, dresses, curtains for the school, and shop aprons for the boys. The pupils do their own planning and cutting. Some simple drafting is done that pupils may better understand how to use the patterns they buy.

The pupils furnish their own materials, selecting and buying after some study of what is good and reliable. Each pupil keeps an account of the amount of material, cost, and time required for each garment, and marks each finished article, "Excellent," "Good," or "Fair," as she thinks it deserves.

In cooking, recipes for family amounts are used, and the pupils are allowed to do as much of the marketing as possible. Planning of menus with reference to nutriment and cost, as well as correct serving, is a valuable part of the work. The care of the house, with especial lessons in cleaning various materials, is also given a prominent place in the course.

The method of teaching has been in all subjects that of development, with direct application to the industrial work and to everyday problems. Arithmetic has been correlated with wage-earning under different conditions, calculating amounts and costs of materials, household and personal accounts and receipts, carpeting, papering, etc. History has dealt with the development and growth of industry of the different sections of the country, while geography has been the study of the raw materials that are necessary to men in the form of food, shelter, and clothing. English has probably been most closely related, as it has been used for expression of all the other subjects in forms of letters of all kinds, descriptions of excursions, and criticisms on work of all kinds.

Much interesting work has been done in making out costs of outfits in clothing for one year on the basis of a working-wage of \$6.00 per week. Below is an uncorrected estimate. The girl allows \$3.00 to her family; \$1.50 for carfares and lunches, leaving \$1.50 per week for clothing, which amounts to \$75.00 per year.

OUTFIT AS PLANNED BY ONE OF THE GIRLS WITHOUT CORRECTIONS

WINTER OUTFIT

1 winter coat.....	\$10.00	
1 hat for work.....	3.00	
2 prs. of shoes.....	4.00	
3 homemade shirtwaists \$0.50 each	1.50	
2 sets of underwear, \$1.00 set.....	2.00	
1 pr. of corsets.....	1.00	
3 homemade corset covers \$0.25 each .....	.75	
4 prs. of stockings \$0.20 each.....	.80	
1 black petticoat.....	.75	
2 white petticoats.....	4.00	
1 pr. of rubbers.....	.50	
1 umbrella.....	1.00	
1 pr. of gloves.....	1.00	
2 flannel petticoats.....	.58	
1 black outside skirt.....	3.50	
1 doz. handkerchiefs.....	.70	
	<hr/>	
Total.....		\$35.08

SUMMER OUTFIT

2 sets of underwear.....	\$ 2.00	
2 combination suits.....	1.50	
1 black petticoat.....	.75	
1 white petticoat.....	2.00	
2 corset covers \$0.39 each.....	.78	
1 underskirt.....	.50	
1 summer dress.....	3.00	
1 pr. of shoes.....	2.00	
3 pr. of stockings \$0.20 each.....	0.60	
1 pr. corsets.....	1.00	
1 hat.....	3.00	
1 spring suit.....	10.00	
3 homemade shirtwaists	1.50	
1 pr. of gloves.....	1.00	
	<hr/>	
Total.....		\$29.63

ODDS AND ENDS

2 yds. of ribbon.....	\$ 0.50	
2 pkgs. of hairpins	0.25	
4 neckties, \$0.25 each	1.00	
Fancy pins.....	0.50	
4 stiff collars, 2 for \$0.25	0.50	
Set of combs	1.00	
3 homemade jabots	0.30	
	<hr/>	
Total.....		\$ 4.05
		<hr/>
		\$68.76
		<hr/>
		75.00
		<hr/>
For pleasure.....		\$6.24

CLEVELAND

A report upon the Elementary Industrial School was issued by Superintendent Elson in 1910. A rather full report upon the history, purpose, and work of this same school by Professor Frank M. Leavitt may be found in the September number, 1911, of the new magazine, *Vocational Education*.

Purpose.—The school was opened in September, 1909. It received boys and girls from any school in the city recommended by the teachers and principals. They have been largely the “failures” in the regular schools. There are at present about fifty girls and one hundred and twenty-five boys from the fifth to the eighth grades. The equipment for girls’ work has not been as fully supplied as that for boys’ work. The purpose has been to provide a modified plan of *general* education rather than of *industrial* training.

Teachers.—Shop or trade experience has not been required of teachers. They are men for shopwork and women for girls’ activities and for all academic studies, selected from the manual-training corps and from the regular teaching force because of special interest in and aptitude for the peculiar work of this school.

Curriculum—

FIRST YEAR, BOYS

DRAWING

Simple working drawing—

Freehand Sketching—Representation of simple objects, graphically and in view-drawing.

Working Drawings—Simple objects illustrating necessity for and arrangement of views. Conventions of lines, dimensions, sections, etc. Drawing to scale. Application in working drawings for the shop. Subject related closely to industry by using much illustration material, drawings, blue-prints, etc., and by visits to shops and drafting rooms.

Practical outlook—

Work as mechanical or architectural draftsmen.

Simple lettering—

Plain letters and figures used in mechanical and architectural drawing.

Application in connection with working drawings and sketches in the shop.

Composition in lettering—

Types of letters used in reference to artistic effect in spacing and in relation to margins and space to be filled. Tail pieces, line finishings, initials, illuminating, monograms.

Practical outlook—

Sign, bulletin, and placard painting as a trade.

Design—

For the development of the sense of outline, line, form, and proportion.

Application in wood- and metal-work.

Simple metal-work—

Design applied in simple objects in copper, brass, and other soft metals, particularly fittings for wood workbox corners, hinges, escutcheons, catches, drawer and door bolts, plates, surface decorations, etc.

WOODWORK

Preliminary problems—

Problems presenting systematic use of tools and general principles of construction, involved in simple projects of use and beauty, applying art principles of form and color, and correlating with metal-work, mechanical and free-hand drawing.

Commercial problems—

Problems of commercial value, such as appliances for school gardens, window boxes, bulletin boards, and frames for schoolrooms, etc., otherwise made at the repair-shop.

Finishes—

Stains, paints, and finishes studied and applied in various wood-working projects.

Business methods—

Time card, expense, and checking system, measuring, estimating, costs, bills, letters, materials, contracts, etc., correlating with English, geography, history, and mathematics, in both first and second years.

FIRST YEAR, GIRLS**HOUSEHOLD ARTS*****Aim—***

The training of pupils in the subjects which pertain to life in the home.

Cookery—

Cooking of types of vegetables, cereals, the various cuts of meat, flour mixtures, instruction in the principles underlying the work, preparation and serving of meals, practice in writing menus, care of the kitchen and dining-room.

Sanitation—

Plumbing, cleaning of traps, care of the sink, refrigerator, and bathroom.

Laundry—

Washing of dishtowels and table linen.

Sewing—

Care and use of machines. Making of uniform for household science, sewing-bag, mending, hemming table linen, corset cover, shirtwaist suit.

Art—

Designs for table linen, wall paper, rugs, draperies, dishes, beauty in form of dishes and cooking utensils and fitness for use, lettering, title-pages of notebooks, illustrations for notebooks, suitable pictures for the home.

Lettering for marking articles made in sewing, textile designs, fitness of articles for their use, suitable designs for embroidery, pictures of beautiful costumes.

Household accounts—

Cost of food in the lessons, cost of meals which are prepared, cost per capita per day, cost of furnishings, textiles, clothing.

Museum—

Textiles and materials from which they are made, pictures of looms, spinning wheels.

Class visits—

Markets, stores, factories, and shops.

Correlation—

All of the work is correlated with English, geography, history, and mathematics, in both first and second years.

SECOND YEAR, BOYS**FIRST TERM**

Work as outlined for the first year continued.

SECOND AND THIRD TERMS

Full time for industrial work (about eighteen three-quarter hour periods each week) may be devoted to specialization in one of the following subjects: mechanical drawing, printing, cabinet making, pattern-making, building construction.

Class visits—

After class talks and discussions, visits to drafting-rooms, buildings in the process of construction and finish, to cabinet shops, paint manufactories, printing-offices, pattern-shops, etc.

SECOND YEAR, GIRLS**HOUSEHOLD ARTS*****Cookery—***

Preservation of food: canning of peaches, pears, tomatoes, jelly, sterilization. Preparation of such combinations of food as could be used for a meal.

Soups, bread, salads, simple desserts, preparation and serving of meals, infant-feeding, invalid cookery. Practice in writing menus.

Sanitation—

Review of first-year work.

Laundry—

Hard and soft water, action of alkalies, making of soap, preparation of starch, removal of stains, washing and ironing of various textiles.

Home nursing—

Making a bed, care of sickroom, simple treatment of cuts and burns.

Sewing—

Making of drawers, nightgowns, dresses of wash materials. Emphasis is placed upon increase in speed.

Art—

Household decoration and furnishing. Colors and materials suitable for the various rooms and uses in a home. Study of the principles underlying artistic construction in dress. Study of historic examples of dress.

Mechanical drawing—

Working drawing for anything needed for the kitchen, such as table, drain board for sink, shelf or drawer for pantry, accurate measurements for windows for window fixtures, drawing to scale of windows.

Household accounts—

Cost of food, fuel, service, rent. Typical family budgets.

Class visits—

Markets and house-furnishing shops.

Economic value—

The use which the woman makes of money in the home is of equal importance to the acquiring of the money. "It is the present duty of the economist to magnify the office of the wealth expender, to accompany her to the very threshold of the home, that he may point out its woeful defects, its emptiness, caused not so much by lack of income as by lack of knowledge of how to spend wisely."

ST. PAUL

The St. Paul Special Industrial Schools have been in operation since 1908. They are for boys exclusively and are located one in each geographic district of the city.

Purpose.—Quoting from Superintendent Heeter's report: "They are special schools for boys who cannot be expected to complete the regular grammar-school course." "Boys come from the fourth, fifth, sixth, and seventh grades." "No boy under fourteen years is admitted." "The elementary industrial school takes pupils that cannot be expected to complete the common schools and endeavors to give them a sort of finishing course before they go to work." Boys may prepare for certain courses in the high schools and a few have done so.

Teachers.—Two men teachers take charge of thirty boys—one teacher for the shop and the other for the academic schoolroom adjacent. These men are graduates of the normal schools of the state with special aptitudes for this work.

Curriculum.—The industrial work is largely wood-working, carried into cabinet making and elementary physics. The course of study is arranged to cover three years.

Each school consists of only three classes, with an average of about ten to the class, known as first-year, second-year, and third-year boys.

"Each day is divided into six periods and each class spends one period in supervised study, another in recitation, and another in the shop. As

indicated above, their studies are limited to reading, writing, spelling, and arithmetic. The reading lessons are almost entirely industrial, geographic, and historical in their character, and the reading period is frequently used as a language period. The arithmetic runs at times toward simple accounts and business forms and elementary bookkeeping. Occasionally an entire half-day is spent by the entire room of thirty boys under the direction of both men in an observational study of some trade or occupation. As a rule, arrangements are made in advance by the teachers with some blacksmith, carpenter, electrician, manufacturer, foreman, etc., and the boys are given every attention possible."

NEWARK

The history and general plans of the elementary vocational work in Newark are discussed by Superintendent Poland in his school report of 1909-10. Boys are sent to one building from different schools in the city. Girls are not provided for. "The school has attracted the dull boy, but it does not cater to him." The school is about two years old.

Purpose.—Dr. Poland states in his report: "There are two things which I hope to see accomplished a little later that may make it easier to retain these boys in school: (a) their superiority as apprentices over boys otherwise trained, and (b) their ability to advance more rapidly as apprentices and hence obtain higher remuneration because of the training received in this school. When it becomes known that this school offers to a certain class of boys advantages that cannot be had in the regular grades its career of greatest usefulness will have begun."

Teachers.—Men are in charge of the shopwork, selected because of successful trade experience supplemented by technical and teaching training. Women are in charge of the academic studies selected because of conspicuously successful experience with and because of their interest in this class of boys.

Curriculum—

FIRST YEAR

Shopwork	825 minutes per week			
Drawing	275	"	"	"
English subjects	275	"	"	"
Arithmetic	220	"	"	"
Ind. geography	55	"	"	"

SECOND AND THIRD YEARS

Shopwork	825 minutes per week			
Drawing	275	"	"	"
English subjects	275	"	"	"
Arithmetic	220	"	"	"
Science	55	"	"	"

Shopwork is given in the following order: Carpentry, metal-work, pattern-making, foundry practice, electrical wiring, printing, and electrical construction. Pupils who do not wish to take the electrical construction in the graduating class may specialize in any other line of shopwork.

The drawing does not correlate in detail with the shopwork but follows a sequence of its own. This method eliminates repetition and insures a steady advance.

The English work includes oral and written composition, spelling, and penmanship. It is directly correlated with the different branches of shopwork.

Arithmetic is treated from the shop side after the fundamentals have been thoroughly mastered.

Science work deals with the properties of matter, heat, light, sound, electricity, and mechanics.

A high standard of efficiency is maintained throughout all classes.

Product that has been completed is the property of the Board of Education.

The school places its graduates in positions suitable to their ability and inclinations. This feature of vocational guidance was successfully started last July, when seventeen out of twenty-one graduates were placed in positions. The remaining graduates entered high school or moved from the city.

Two lines of industrial work call for special mention, the pattern-making and elementary tool-making. A foundry room in the basement gives an opportunity to apply the pattern in the process of casting. In the toolroom two forges make it possible to give practice in tempering and welding. The tools are made of sheet iron by the use of the regular iron-working tools of this trade.

The value of industrial training for the teachers of the industrial activities was evident throughout this school.

SUMMARIES

All the industrial activities found in the elementary industrial schools here considered are tabulated below. The letters opposite each activity indicate the cities in which they are found: B., Boston; C., Cleveland; I., Indianapolis; N., Newark; S., St. Paul.

ACTIVITIES

Boys	Girls
1. WOOD-WORKING	1. SEWING
(B.C.I.N.S.) Carpentry	Plain (B.C.I.)
(B.C.I.N.S.) Joinery	Dressmaking (B.C.I.)
(B.N.) Wood-turning	Art needle-work (B.C.I.)
(N.) Pattern-making	
(C.) Cabinet-making	
(C.N.) Building construction	
(B.C.I.) Repair-work	
2. METAL-WORKING	2. COOKING AND HOUSEKEEPING
(B.C.I.) Art metal	(B.C.I.)
(N.) Tool-making	
3. PRINTING	3. WEAVING
(B.C.I.N.)	(I.)
4. ELECTRICAL WORK	4. MECHANICAL DRAWING
(B.N.)	(B.C.I.)
5. CLAYWORK	5. SPECIAL ART TRAINING
(B.)	(I.)
6. BOOK-MAKING	
(I.)	
7. MECHANICAL DRAWING	
(B.C.I.N.S.)	
8. SPECIAL ART TRAINING	
(I.)	

Agreement.—In some particulars all the schools under consideration are in agreement. One point of agreement is in the “call” for the industrial activity, or to put it differently, in the schoolman’s motive for introducing industrial activities into the elementary-school grades. The most fundamental motive appears to lie in the unmet need of the

boy and girl who does not or cannot find education and culture (assuming that these two words are not synonymous) through and by books alone.

A second point of agreement is in the choice of material for educational purposes. The uniform reasoning seems to have been this: "If a child's mind does not react by dealing with the abstract and the symbol—let us try the reality." With the disappointing experiences in manual training, school cooking, and schoolroom nature-study fresh in mind and influenced by the growing demands of the industrial world, it was natural that *industrial activities* should loom large in the minds of all who were studying the unsuccessful school child.

A third point of agreement is the introduction of a secondary aim in elementary training. While all agree that the primary purpose of all elementary training should be general education, it is believed that a secondary aim of vocational preparation is as legitimate as a secondary aim of high-school preparation, and that the practical recognition of this secondary aim need not interfere with the fullest realization of the primary aim.

A fourth point of agreement lies in the conviction that the book is indispensable in any form of elementary training, that at least half-time should be given to the book, but that the book and the activity should be so related as to vitalize each other.

A fifth point of agreement relates to method and to quality of industrial product. It is agreed that both should be those of the trades of which the activity is a part. School practice should be "shop practice" as far as is practicable. However, there appears to be a universal conviction that in this elementary field the educational values must always dominate rather than the industrial values.

A sixth point of agreement is that the elementary industrial courses must be so planned that a boy or girl completing them may at his option enter advanced courses of study or enter industrial life.

A seventh point of agreement is that these children need educational or vocational guidance when they pass out from the elementary course and that they need opportunities for continued education if they enter the industries.

The beginnings of this departure in school practice were alike in all cases. Some conveniently located building was converted into a special school to which boys and in some cases girls also were invited from the

entire city. At first the overaged, the mentally slow, formed the school membership. The quality of pupils is, however, improving.

The courses of work are planned to cover two or three years, the last two years of the grammar grades, although overaged, overgrown, and unsuccessful children are taken rather freely from the sixth and in some instances from the fifth grade.

In general the industrial activities selected are the same in all schools, namely, those most fundamental in the world's industrial life. There is, however, at each school an experimental attitude. The North Bennett Street Industrial School in Boston, being primarily an "experimental station," has tried out a larger number of activities than have other schools. The work in Newark in pattern-making and tool-making are suggestive of this experimental attitude.

Differences.—There are several points at which there is not exact agreement.

There is a difference in the degree of vocational emphasis. This emphasis appears to be greater in Newark and least in Indianapolis. Indianapolis and the North Bennett Street Industrial School seem to be more at one at this point, while Cleveland and St. Paul are more closely allied with Newark. These three schools are separate schools to which selected pupils are sent, all boys, except in case of Cleveland. In Indianapolis six regular schools are following the industrial plan, boys and girls, in all about seven hundred children.

Cost.—The cost of this plan of work will of necessity be greater than that of the sedentary, exclusively book plan. It would appear also that the cost will increase with the vocational emphasis, for this emphasis carries with it a larger variety of activities, a more varied and complete mechanical equipment, and more highly trained and more thoroughly experienced teachers.

DEDUCTIONS

1. The elementary industrial plan of education requires for its success a school building constructed for it. A conventional schoolhouse will not do. Each activity should have its room or rooms built for that particular activity.

2. "When a manual activity becomes merely manual labor it ceases to be an educating activity. At this point a labor-saving tool or machine must be introduced." This statement was made to the writer a year

ago by Mr. Robert Himelick who is in charge of one of the industrial centers in Indianapolis. If it is, as it appears to be, a principle inherent in this plan of education it will determine the amount and variety of machinery that must be made a part of shop equipment.

3. "A boy between the ages of fourteen years and eighteen years is potentially at his best as a mechanic. That is, during these years he can with a minimum amount of training turn out a finer mechanical product than he can in later life." Superintendent Poland has made this generalization. He is the first to state it so far as the writer knows. It exerts an important influence in standardizing the work of his school. If this shall be found to be a principle, it cannot but profoundly influence all educational practice in the upper elementary and lower high-school grades.

CONCLUSIONS

The problems involved in educating girls by the elementary industrial plan are not as yet either so successfully worked out or as fully worked out as are those for boys.

The least successful part of the plan is the interrelation of the book and the activity. In no place, so far as the writer knows, is this interrelation much more than an ambition. It is not yet entirely clear how far this interrelation may be carried with profit.

It is becoming evident that the influence of the industrial plan of elementary education is destined to be considerable on both "manual training" in general and on all elementary education.

This form of education will not eliminate all the "failures" from the schools, but it is diminishing their number. For many children school has been a place where they have been trained to bear defeat unresistingly. For a growing number of them the elementary industrial school has become a place where they are taught how to attain success.

III. THE SEPARATE OR INDEPENDENT INDUSTRIAL SCHOOL

M. W. MURRAY

Director of Industrial Education, Newton, Mass.

The development of the independent industrial school is due to a broadening educational policy which recognizes the right of every pupil to the kind of training best suited to his individual needs. We have come to realize that a scheme of education which is intended primarily for the select few who enter the professions will not educate effectively all children, even if they were compelled to remain in school. These facts were forcibly brought to the attention of thinking people by the report of the Massachusetts Commission on Industrial Education published in 1906. The report showed clearly that the schools are not educating a large percentage of their young people, who are entering industrial life poorly equipped for their struggle. To add to their difficulties, industrial conditions are now so changed that it is no longer possible for them to receive the training necessary for their development and advancement. These two conditions form a common problem for which the industrial school must furnish the solution.

It is the intent of the Massachusetts law to promote by state aid the development of a new type of school which in fitting for wage-earning occupations shall be unhampered by the practices and methods of the regular public schools. To encourage the establishment of these schools, the state enters into an equal partnership with the local community and pays one-half of the running expenses of the school if its plant, teachers, courses of study, and methods of instruction meet with the approval of the State Board of Education. The law makes it possible for these schools to have their own governing boards, independent of the school committee, but co-operating with it. This, however, is not necessary, and where the city government desires, the school committee may be the governing board of the state-aided industrial school. To the end that these schools may have an opportunity to work out their own methods according to new ideals, they are separate from the regular schools, but

it is intended that they shall, so far as possible, work together. The same general problems are confronting all of the industrial schools which have been organized during the last three years, but the schools differ to such an extent that a general description is impossible; hence this paper will deal mainly with the Newton State-aided Day Industrial School for Boys.

Supervision and administration.—A feeling that all educational activities should be under one general control has led to the organization of a new Board of Education in Massachusetts, to take the place of both the Commission on Industrial Education and the old State Board of Education. This new board has one commissioner, with two deputies, one of whom has charge of all the industrial work in the state. In a like manner, the industrial schools are in charge of a specialist under the Superintendent of Schools. In the case of Rochester, N.Y., and Newton, Mass., the same person has charge of all the manual, industrial, and technical training throughout the public-school system, making it possible for the work of one school to supplement that of another. In four Massachusetts cities the industrial schools are operated under separate boards of trustees but to all intents and purposes they are a part of the school system and dependent upon it for their pupils. It seems probable that the new schools which are established will be directed by the school committees, with advisory boards composed of practical men, whose duty it shall be to act in an advisory capacity as to the courses of study, equipment of the school, and the guidance of pupils in selecting a vocation.

The independent industrial schools, as now conducted under the Massachusetts Board of Education, include day schools for boys and girls over fourteen years of age, evening trade-extension courses for men and women over seventeen years of age who are engaged in similar lines of work during the day, and part-time courses for those of both sexes between the ages of fourteen and twenty-five years who are employed.

Need of these schools in the public-school system.—The need of a school of this type and the exact work which it should do vary with the industrial conditions of the city and with the educational opportunities already offered by existing schools. A school system which deals with the pupils as individuals and offers strong courses in manual training, drawing, cooking, and sewing will reach and hold more children than one

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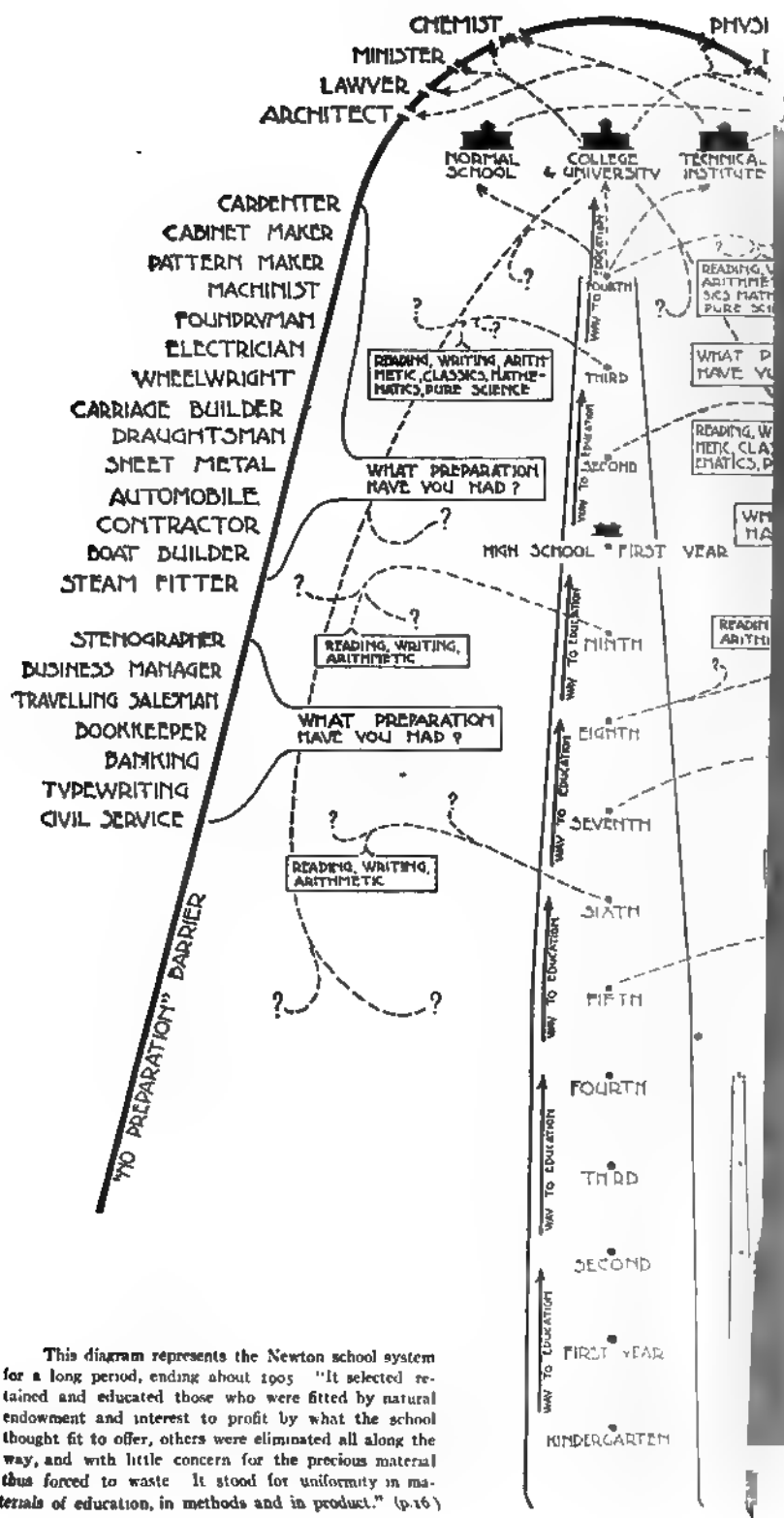
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This diagram represents the Newton school system for a long period, ending about 1905. "It selected retained and educated those who were fitted by natural endowment and interest to profit by what the school thought fit to offer, others were eliminated all along the way, and with little concern for the precious material thus forced to waste. It stood for uniformity in materials of education, in methods and in product." (p.16)

which does not offer these courses.¹ It is also true that the addition of commercial and manual-training courses, and the establishment of technical high schools, increase the holding power of the school system, yet even where these exist there is still a large group of boys and girls which the industrial school can reach.

Chart I shows graphically the present place of the industrial school in the Newton school system, which before the development shown on the right, held a larger number of pupils through the high school than any other city in the country. This development includes broad courses in manual training, cooking, and sewing, prevocational training in the grades, and the establishment of a \$500,000 Technical High School with a special industrial course. If Newton, a residential city, with comparatively little manufacturing, needs such a school, the need in most other places must be indeed great.

Children who are reached.—These state-aided industrial schools receive pupils as soon as they can obtain age and schooling certificates,

TABLE I

ENROLLMENT OF THE NEWTON SCHOOL BY GRADES, SHOWING NUMBER OF PUPILS COMING FROM EACH GRADE AND THE PERCENTAGE OF LOSS ACCORDING TO GRADE

Grade	Total Number Received	Dropped out	Percentage of Loss
Fifth or below.....	9	4	44.4
Sixth.....	21	7	33.3
Seventh.....	25	8	32
Eighth.....	20	7	35
Ungraded.....	6	1	16.6
Above eighth.....	2	..	....
Total.....	83	27	32.5

NOTE.—Two pupils coming from the eighth grade went from the Industrial School to the Technical High School. This means a loss to the school system of only five boys from that grade, or 25 per cent, and a total loss of only 25, or 30.1 per cent.

In the Massachusetts schools as a whole, the majority of the pupils in the day industrial schools have completed the grammar-school course before entrance.

which in Massachusetts is at fourteen years of age, if they show that they are otherwise qualified to profit by the work which is offered. As shown by Table I, the majority of the pupils in the Newton School

¹ Based on studies made by the writer during eight years' work in Springfield, Mass., with groups of boys who had four to six hours of manual training per week.

come from the sixth, seventh, and eighth grades of the grammar schools. It has been clearly shown that these children could not be persuaded to continue in the regular schools, but they elect to attend a school in which practical training is given. Considering the educational advantages of Newton, and the character of the city, the number in attendance in its industrial school (62) is larger in proportion to the size of the city than that of any other school, yet there are about as many more in both the elementary and high schools who would be better served by the industrial-school training.

Aim of the school.—This school aims first to discover what its pupils are capable of doing and what line of trade work, if any, they are fitted to pursue. Where several lines of shop-training are offered, pupils are given a chance to try each in turn until it is discovered what they are best fitted to do. It has been found that most boys have formed a pretty clear idea as to what they wish to do, and very little changing is necessary. Our experience with these schools seems to show that the period from fourteen to sixteen, or the first two years of the industrial school, is the time for vocational guidance through very thoroughgoing trade instruction which will give a boy favorable entrance to a trade if he leaves the school at sixteen years of age. The aim is to offer a four-year course, three years in the school and the fourth in the trade, under the supervision of the school. A course of this kind will give the boy entrance to the trade as an apprentice of advanced standing at a time in his training when he is beginning to specialize.

Courses of study and methods of teaching.—In the Newton Independent Industrial School the shopwork includes courses in carpentry, cabinet making, pattern-making, printing, machine-shop practice, and electrical work. The shopwork forms a core for the teaching of drawing, English, mathematics, science, history, and civics and makes it possible for pupils to see the real use of much of the bookwork.¹

Shopwork.—The shopwork is all conducted in the way in which similar work in commercial life would be carried on. Everything is real work and nothing is made for the scrap heap. In the wood-working shop, furniture and equipment for the school are made, such as drawing-tables, chairs, benches, teachers' desks, bookcases, cabinets, etc. Work in pattern-making is made practical by having the boys make patterns for the machines and tools which are being constructed in the machine-

¹ See *Bulletin No. 3* of the Massachusetts State Board of Education.

shops. As a part of the electrical course, the boys set up motors and other pieces of apparatus, run wires for these, and do many other kinds of electrical work. In Rochester, where most successful electrical work is being done, the boys have not only wired their own building, but are doing similar work for all the school buildings in the city. In the Worcester Trade School much of the shop practice is on commercial work which is sent in and paid for by the manufacturers of the city, while in Beverly the school shop is located in the plant of the United Shoe Machinery Company, and does productive work for it. Rochester, Newton, and other schools have thus far found ample opportunity to dispose of their products within the school system. The Newton school is just completing an order for six wood-turning lathes with friction clutches to be used as a part of the Technical High School equipment. As a part of the printing course in the Newton school a paper is published which is edited and printed by the boys. This department has done practically all the printing for the school department, with the exception of the annual report. A strong course in drawing, which is directly related to the work, is a prominent feature. In the case of such trades as machine-work, pattern-making, wood-working, and electrical work the drawing is mainly mechanical, with free-hand shop sketches, but for the boys who are specializing in printing, the work includes free-hand drawing, lettering, design, color, harmony, etc.

English.—The aim of the work in English is to enable the pupil to express himself clearly, adequately, and in correct English both orally and in writing; to develop his vocabulary of industrial terms; to develop the ability to consult sources of information along mechanical lines, and to organize working facts into convenient and useful form, to acquaint him with the rapidly developing literature of the modern industrial world; and to cultivate the habit of reading good books. The teaching of this, as of all other related academic work, is based on the theory that the boy will retain and make use of only that part which he is able to appreciate and see a real need for. This is done through having the boys explain in written and oral language their work in the shops, and their understanding of shop orders. Excellent practice in letter-writing is obtained through making requests for catalogues, answering advertisements, writing orders for goods, and requests for more complete information as to shop orders which are sent in from outside the school. An interest in books is developed through a study

of trade papers and magazines bearing upon the subject on which he is working. In this way an interest in the public library can be developed, the great majority of boys in the school patronizing it first through a selected list of books loaned to the school by the library, and later going to the library itself.

The following is a report on books loaned to the Newton Independent Industrial School by the Newton Free Library, showing the number of boys who read each book and reported on the same:

Boys' Life of Abraham Lincoln	7
Biography of a Silver Fox	8
Control of Body and Mind	3
Dormmates	7
Elementary Turning	2
Fighting the Fire	10
Harper's Electricity for Boys	7
Harper's Machinery Book	3
Heroes of American Discovery	4
Heroes of the Storm	8
Horse Fair	8
Iron Star	4
Making of an American	8
New Boy	9
Prince Dusty	8
Son of Light Horse Harry	4
Three Scouts	12
The Training of Wild Animals	12
The Story of King Arthur	9
Uncle Sam's Business	3
Washington and His Country	3
Winning His Way to West Point	10
Working with the Hands	5
Harding at St. Timothy's	6
Harper's Out-door Book for Boys	3
Jack of All Trades	6
Leather Working	10
Life of Theodore Roosevelt	4
Lost in a Jungle	5
Panther Stories	8
Real Electric Toy Maker	3
Story of an American Soldier	6

Textiles (Dooley)	2
The Sciences (Holden)	1
The Young Rangers	16
Trapper Jim	5
True Story of Benjamin Franklin	3
Two Young Inventors	9
Washington's Young Aids	7
Weatherby's Inning	8
Young Ice Whalers	8
Young Trailers	12

Mathematics.—Such a subject as machine-shop practice, through its shop calculations and shop costs, offers an opportunity to teach, with an absolute application to what the boys are doing, all the practical mathematics which the average man will ever need to know or use, but when we come to such a subject as printing, the problem of applied mathematics is more difficult. The following is offered from the printing course as to the way in which this is handled: “To make an accurate estimate on a printing job, all the costs which enter into it must be known. Among these the following must be taken into consideration: Cost of stock, including type, paper, ink; composition; plates; press-work; stonework; make-up; binding, etc. Time-slips showing the number of hours devoted to each job must be kept. The general expense of an office, including rent, interest on the investment, cost of light, heat, and power, together with salaries and an allowance for deterioration, must be considered in determining the price to be charged for a given piece of work. Ample first-hand information is easily accessible, and the actual business of the office is the basis for the correspondence and mathematics.” The other academic subjects are similarly treated.

Teachers.—The most difficult problem in the industrial schools is to find teachers who are capable of carrying out the program outlined in part above. The teachers who are dealing with trade subjects are first thorough mechanics in their different lines, and it has been the aim to secure men who correspond with first-class foremen or superintendents in a commercial establishment. In addition to this, the academic training which will enable them to teach the related work is usually required. Such talent comes high, but if we are going to have real efficiency in either an industrial or a regular school, we must pay for the same kind of services and ability that a commercial establishment

demands; in other words, the industrial school should not have a teacher who is not capable of making an equal amount in the outside world. In some cases it is actually necessary to pay them more than they are receiving in commercial work to attract such people to teaching. Only in this way can we get teachers who have a body of knowledge worth drawing upon.

Building and equipment.—On account of the expense of the building and its equipment, starting these schools has been difficult, and it has been the almost universal practice to take buildings which have been discarded for regular school purposes and adapt them to the needs of the industrial school. There is a widespread feeling that a school plant which is not good enough for the regular schools will answer all the purposes of an industrial school, and that it can best be housed in a shop. Where old school buildings have been taken, there has been a feeling on the part of parents that the industrial schools are not as good as the regular public schools, and this has probably kept quite a large number from sending their children. If we are going to make these schools a success, we must give them not only a superior class of teachers, but adequate housing and equipment. It is often said that a shop can be used for this purpose, which may well be the case, but if a shop is used it should not be an old, broken-down commercial plant. This will mean the erection of buildings in which any of us ought to be glad to have our sons and daughters work; in fact, plants of the type of the Cincinnati Milling Machine Co. and others which might be mentioned are far in advance of the average school building as to light, ventilation, convenience, etc.

Does the industrial school successfully deal with a group which is not being reached by the other public schools?—The question may fairly be asked: Are these schools dealing successfully with a group which is not being reached by the other schools? It is the opinion of the principals and teachers of the elementary schools in Newton that these pupils would not be in any school if they were not attending the industrial school: in fact, in almost every case the boy was about to leave the elementary or high school before he entered the industrial school, and in some cases actually had left. This means that the school is reaching only those who were hopelessly lost to the other schools. It is not doing all that it should until it reaches out into the grades and takes boys a year or two before the point of leaving and entering an industry.

TABLE II

STATISTICAL SUMMARY OF NEWTON INDEPENDENT INDUSTRIAL SCHOOL

Total enrollment to date	83	
Present number in attendance	58	
Highest number in attendance	59	
Highest average attendance per month	51.8	
(April, 1911)		
Lowest average attendance per month	26.5	
(June, 1910)		
Enrollment for school year 1909-10 . .	48	
Enrollment for school year 1910-11 . .	62	
Dropped out during 1909-10	14 = 29	per cent of yearly enrollment
Dropped out during 1910-11	7 = 11.2	per cent of yearly enrollment
Total number dropped out to date . . .	27 = 32.5	per cent of total enrollment

Two of this number entered the Technical High School, making the percentage of loss to the school system 30.4 instead of 32.5.

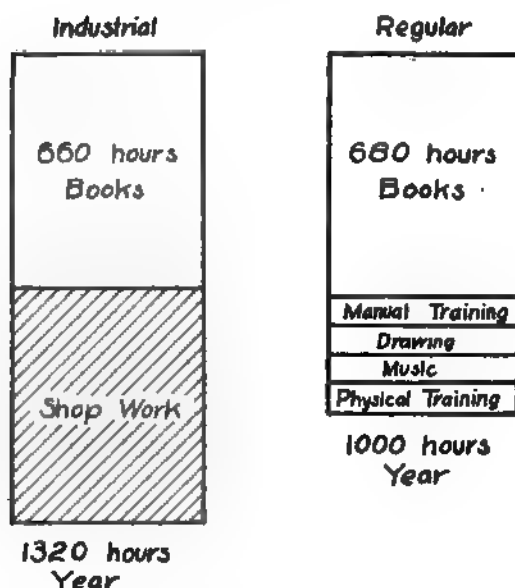
Delinquent	10
Sent to reform school	1
Compelled to go to work	7
Went to work from choice	3
Entered high school	2
Expelled for discipline	2
Father disapproved of industrial school	1
Mother disapproved of industrial school	1

Table I shows the grades from which these pupils have come, the number and percentage of loss. This percentage may seem large, but when we consider that these pupils would not have been in any school, and that during the comparatively short time they were in the industrial school they were fitted for better work than they otherwise would have been, it would seem that it has been worth while. Table II gives a statistical summary to June 1, 1911. This table shows that the largest number who dropped out are those classed under the head of "Delinquent," making a total of ten. The experience with this group seems to show that to deal successfully with boys of the type who are not being reached by the public schools they should be taken when they are about fourteen years old, preferably younger, before bad habits have become fixed. The great majority of the number classed under "Delinquent" were boys from sixteen to nineteen years old, who had

cultivated habits of idleness, profanity, smoking, etc. It was found that the school was not, at that particular stage in its organization, able to deal successfully with this group.

How are pupils held in school?—It is not a difficult problem in the industrial school to hold boys through interest in their work and the development of a sense of responsibility, by having them do work which

CHART II
SCHOOL YEAR



seems to them worth while, but the difficult problem is to hold them in the school after they feel that they have learned enough of a certain trade to enable them to get a job which seems to offer good financial returns at that time. This is overcome through (1) an understanding with employers that they will not take boys from the industrial school without a written statement from the instructor in charge of the department, or the principal of the school, that such a boy is fitted for the work and that it is necessary for him to do it; (2) by personal conferences with the boys and their parents, making them see that completion of the course will insure an all-round training, which in the end, will enable

the boy to earn more money. It will be noted in Table II that next to the delinquent class the largest is made up of those who are compelled to go to work. These boys did not receive their certificates until the principal of the school had investigated the case very carefully and used all possible arguments with the parents to keep the boys in school. In most of the cases—probably 90 per cent—it was the opinion of the principal that it was absolute financial necessity that compelled these people to go to work.

What does the boy know when he finishes the course?—On the trade side the student has at least the equivalent of two years of apprenticeship, and an all-round experience and opportunity to work on things which a boy of his age could not possibly get working under commercial conditions. In addition to this, he receives a training on the academic side which it is impossible to give in the regular schools. This training, in almost all cases, is the equivalent of at least the last two years in the grammar school and the first two in the high school. The question may well be asked how this can be done. It would appear that if a pupil gives half his school time to shop work he will not be able to compete with a pupil who is giving all his time to the academic subjects. The answer to this is that the industrial school has a longer day by one hour and a longer year by four weeks, making a greater length of session by at least 320 hours a year, or a total of 1,320 hours. Against this we have a total of not over 1,000 hours in the regular schools, and subtracting from this the time for such activities as manual training, drawing, music, physical training, etc., we have left a total of 680 hours. This shows that in actual hours the industrial school devotes practically as many to book work as the regular elementary schools. In addition to this, the teaching is done in such a way that the boy sees why he is doing everything which he does, and the reason why he should get it right. The class unit is made up of not more than fifteen and the instructors are able to give pupils their individual attention. The main difference between the methods used in the industrial school and those of the average elementary and high school, is that in the latter schools a large amount of the work is prepared at home, and the teacher spends time in having the pupils show her, through recitations, what they have not learned and do not know, while in the industrial school the teacher spends his time in directing the individual study of each pupil and teaching him that which he does not know, and could not learn alone.

Can the regular schools profit by the experience of the industrial schools?—While the pupils in most industrial schools are those whom the public schools have failed absolutely to reach, it should be understood that the industrial schools are not intended primarily for this class. It is contended that probably 75 per cent of all pupils in the elementary schools could be more successfully dealt with through the methods of the industrial schools than through the methods which are being used at the present time. At the end of such a course, these students would have not only a good groundwork for a trade, but they would have received more effective academic instruction and the trade experience would be a valuable asset whether they were going to be teachers, lawyers, doctors, or ministers.

IVA. THE SEPARATE TECHNICAL HIGH SCHOOL

JAMES F. BARKER

Principal of the East Technical High School, Cleveland, Ohio

With the growth of industries and commerce there has come a demand for training along specialized lines not originally included in our scheme of public high schools. It has been in response to these needs that the remarkable development taking place in secondary education has had its chief inspiration. This has been particularly the case in the larger cities where changing conditions have been greatest and where the lack of persons especially trained to meet the needs of manufacturing and distributing has been most keenly felt. Demand for special training has, furthermore, come from within the ranks of the workers as well as from those directing these activities. A few years ago public secondary education had not been thought of, and the few private academies were concerned only with preparing their pupils for the colleges. This has been, in a measure, the heritage of our secondary schools, and it is only recently that the proposal to train boys in the high school for occupations, as well as for the professions, has met with approval. It is doubtful whether this would have been possible had not the way been prepared by the previous introduction of handwork or manual training. This study made its entrance only upon the earnest representation of its adherents that it was solely for cultural purposes and not with any utilitarian end in view. The usefulness as well as the educational value of handicraft soon became apparent, however, and we are now on the threshold of the greatest development along the lines of industrial and vocational education that has yet taken place.

Meaning of technical high school.—In New York, Chicago, San Francisco, Cleveland, and a few other large cities, there have recently been established special schools whose aims have so differentiated them from other schools as to require a new designation. The National Education Association, in order to get a clear view of what constituted schools of this nature, appointed a committee to consider and report upon a definition of a technical high school. It is this definition, subsequently

reported, that is taken as a basis in this paper. The definition is too comprehensive, however, to be included here.

At the outset it is necessary to exclude the so-called academic high schools, which merely have partial manual-training departments.

Nor would it seem proper to include under the head of the separate technical high schools those which boast of complete manual-training departments, but whose courses still are dominated by the universities and the colleges. Very few, even of the schools terming themselves technical high schools, have been able to divorce themselves from a curriculum which has for its fundamentals those studies usually prescribed in the literary schools and which devote less than 25 per cent of the time to handwork. A glance at the course of study of the manual-training high schools shows a course including English, mathematics, a language (either classical or modern), some history and science, plus shopwork and drawing unrelated to the rest of the course. In most of these schools even technical subjects have very little interdependence one with the other. Such schools should not be included under the head of separate technical high schools. Those of the above type being then eliminated, the schools that could be included would be only those which have a course of study where English, mathematics, science, shopwork, and drawing are the fundamentals and where the foreign languages and history play less important parts. Of schools of this nature there are comparatively few in the United States. Among the best examples are the related schools in San Francisco, namely, the California School of Mechanical Arts and the Wilmerding School of Industrial Arts for Boys. Another school of this nature is the Technical High School of Cleveland. Certain courses in the Technical High School in Chicago and the Stuyvesant High School in New York would entitle these institutions also to representation.

In some of these courses the aim seems to have been not so much to meet college requirements as to fit boys and girls to go out into industrial life. In this connection the Williamson Free School of Trades, in Pennsylvania, might also be included, as the academic work of the school is at least of high-school grade and the technical courses are scarcely to be approached by those of any of the public technical high schools.

Without attempting to analyze what is included under the various headings, one would find that a comparison of the courses of study is not without interest.

SAMPLE COURSES OF STUDY
THE CALIFORNIA SCHOOL OF MECHANICAL ARTS
SYNOPSIS OF PRELIMINARY COURSES

FIRST YEAR

BOYS AND GIRLS

	No. Weeks	Periods per Week
English.....	40	5
Mathematics (algebra).....	40	5
Science (physics).....	40	5
History (ancient and mediaeval).....	40	5

BOYS

General woodwork, molding, and pattern-making.....	40	10
Free-hand and mechanical drawing.....	40	5

GIRLS

Sewing.....	40	7½
Free-hand and mechanical drawing.....	40	5

SECOND YEAR

BOYS AND GIRLS

English.....	40	5
Mathematics (geometry).....	40	5
Science (chemistry).....	40	5
History (modern European and American).....	40	2½

BOYS

Forgework and molding.....	40	10
Free-hand and mechanical drawing.....	40	7½
Modeling or wood-carving.....	..	..

GIRLS

Dressmaking and millinery.....	40	10
Free-hand and mechanical drawing.....	40	5
Modeling or wood-carving.....	..	..

THIRD YEAR

BOYS

Mathematics (logarithms and trigonometry).....	10	5
Science (radiant energy).....	10	5
Machine shop.....	20 to 40	10

GIRLS

	No. Weeks	Periods per Week
Science (radiant energy)	10	5
German (elective)	40	5
Cookery	40	10
Household art and science, chemistry of cooking	40	5
Modeling or wood-carving . . . . .	..	..

The preliminary course serves as a foundation for the different trades and technical courses. This part of the curriculum is essentially the same as the course given in the so-called manual-training high schools. It is different for boys and girls as regards toolwork and domestic branches, but otherwise it is the same for all students, and is required of all. It divides its time about equally between academic and industrial branches.

The academic branches include English, mathematics, science, and history. One period of fifty minutes per day for two years is devoted to each of these subjects with the exception of history, which is given on alternate days.

Instruction in English includes word-study, grammar, and rhetoric, practice in written and oral expression, and a study of literature through English classics, covering the ground designated as Subject One of the requirements for admission to the University of California.

The mathematical instruction includes elementary algebra, plane and parts of solid and spherical geometry, and plane trigonometry.

The science work consists of elementary physics during the first year, and chemistry during the second year. Various courses in applied science are given throughout the third and fourth years.

TRADES AND TECHNICAL COURSES

The school has facilities for teaching the following trades and technical courses, from which each student is allowed to make a selection at the beginning of his third year.

- | | |
|--------------------------|--|
| 1. Pattern-making | 8. Domestic science |
| 2. Forgework | 9. Dressmaking |
| 3. Molding | 10. Millinery |
| 4. Machine-shop practice | 11. Preparatory for technical college course |
| 5. Machine drawing | 12. Polytechnic course |
| 6. Industrial chemistry | |
| 7. Industrial art | |

Through these courses the school aims to give each student a thorough knowledge of technique of some one industrial pursuit, from which he may earn his living. It offers, however, something more than the mere equivalent of a workshop apprenticeship. Besides the broad and thorough training

afforded by the combined academic and industrial branches of the preliminary course, there is the additional advantage that the shop instruction throughout is based upon work that is selected, as far as possible, for the benefit of the student, and not for the profit of his employer.

STUYVESANT HIGH SCHOOL, NEW YORK CITY

INDUSTRIAL COURSE

The industrial course of study has been prepared for boys who wish to go directly from high school to employment in some trade or other remunerative occupation.

FIRST YEAR

	Periods
English.....	5
Algebra.....	5
Free-hand drawing.....	2
Mechanical drawing.....	4
Joinery and cabinet-making.....	10
Music.....	1
Physical training, including physiology and hygiene.....	2
	<hr/>
	29

SECOND YEAR

English.....	3
Plane geometry.....	4
Chemistry.....	5
Free-hand drawing.....	2
Mechanical drawing.....	4
Wood-turning, pattern-making, and foundry.....	10
Physical training.....	2
	<hr/>
	30

THIRD YEAR

English.....	3
Plane geometry and trigonometry.....	3
Physics.....	5
Modern history.....	3
Mechanical and architectural drawing.....	4
Forging and machine-shop practice.....	10
Physical training.....	2
	<hr/>
	30

FOURTH YEAR

	Periods
English	3
Shop mathematics.....	3
American history and civics.....	4
Advanced chemistry or economics or industrial and commercial law or applied mechanics.....	..
Steam and electricity	4
Mechanical or architectural drawing	4
Special shop or laboratory practice in one of the following electives :.....	10
1. Building construction (carpentry, sanitation, including heating and venting, electrical wiring and installation).	
2. Advanced forging and tool-making.	
3. Advanced pattern-making and foundry practice.	
4. Advanced machine-shop practice.	
5. Industrial chemistry, lectures and laboratory practice.	
Physical training.....	2
	<hr/> 30

The above course of study has been planned especially for boys who wish to go directly from high school to positions in machine shops or other works, in building construction, in electric-light and power plants, in chemical departments of manufacturing or packing establishments, in commercial industries requiring technical knowledge and skill, or in the various departments of the city government.

CHICAGO TECHNICAL HIGH SCHOOLS

SPECIAL INDUSTRIAL COURSES

The first two years in all the courses will be devoted to preliminary work in the fundamentals, as shown in the following outline.

FIRST YEAR

	Weeks	Periods
English.....	40	5
Algebra.....	40	5
Physiology.....	10	5
Physiography or bookkeeping.....	30	6
Mechanical drawing.....	40	5
Woodwork	40	9
Free-hand drawing.....	40	1
Gymnasium.....	40	1

SECOND YEAR

English.....	40	5
Plane geometry.....	40	5
Elementary physics or free-hand drawing.....	40	6

	Weeks	Periods
Mechanical drawing	40	5
Blacksmithing	20	10
Foundry and pattern-making	20	10
Gymnasium	40	1

At the beginning of the third year pupils will be given an opportunity to elect one of the following courses to be pursued during the third and fourth years:

COURSE IN MECHANICAL CONSTRUCTION AND ENGINEERING PRINCIPLES

THIRD YEAR

	Weeks	Periods
English	40	3
Solid geometry	20	5
Advanced algebra	20	5
Advanced physics	40	6
Industrial history	40	2
Machine-shop practice	40	15
Machine and free-hand drawing	40	5
Gymnasium	40	1

FOURTH YEAR

English	40	3
American history or civil government	40	2
Trigonometry	20	5
Chemistry	40	6
Manufacturing	20	15
Mechanical engineering principles	20	20
Machine and free-hand drawing	40	5
Gymnasium	40	1

COURSE IN ELECTRICAL CONSTRUCTION AND ENGINEERING PRINCIPLES

THIRD YEAR

English	40	3
Solid geometry	20	5
Advanced algebra	20	5
Advanced physics	40	6
Industrial history	40	2
Machine-shop practice	20	15
Electrical construction	20	15
Machine and free-hand drawing	40	5
Gymnasium	40	1

FOURTH YEAR		
	Weeks	Periods
English.....	40	3
American history and civil government.....	40	2
Trigonometry.....	20	5
Chemistry.....	40	6
Electrical construction.....	20	15
Electrical engineering principles.....	20	20
Machine and free-hand drawing.....	40	5
Gymnasium.....	40	1

COURSE IN MACHINE-SHOP PRACTICE

THIRD YEAR		
English.....	40	3
Shop mathematics.....	40	5
Advanced physics.....	40	6
Industrial history.....	40	2
Machine-shop practice.....	40	15
Machine and free-hand drawing.....	40	5
Gymnasium.....	40	1

FOURTH YEAR		
English.....	40	3
American history or civil government.....	40	2
Chemistry.....	40	6
Machine shop.....	40	20
Machine and free-hand drawing.....	40	5
Gymnasium.....	40	1

In the above outlines one thing is apparent, namely, the tendency to drop part of the academic work and to devote more and more time to some special technical branch as the pupil progresses from the second toward the fourth year in school.

THE CLEVELAND TECHNICAL HIGH SCHOOL

In response to a specific statement from the secretary of this organization a longer description of the Cleveland Technical High School is given as a good example of the general type of separate technical high schools.

Aims.—The Cleveland Technical High School has two immediate ends in view: (1) to prepare youth of both sexes for a definite vocation

and for efficient industrial citizenship; (2) to help men and women already engaged in a vocation to better their condition by increasing their technical knowledge and skill. To such as may desire to pursue their studies still further it also offers the opportunity to prepare for entrance to technical schools of college rank.

In most classes the nature of the studies and the purposes in view are so different as to demand a separation of the boys from the girls. There is therefore organized within the one building a boys' school and a girls' school.

Sessions.—The daily session consists of nine periods of forty-five minutes each, beginning at 8:00 A.M. and ending at 3:15 P.M. The schedule of technical and laboratory work is arranged in double periods. Ordinarily each student is expected to carry three academic and two technical or laboratory subjects. There is a thirty-minute period for lunch not included in the above schedule.

The school is in session the year round. The year is divided into four quarters of twelve weeks each, with one week between the quarters. By thus eliminating the long summer vacation a saving of an entire year in the usual high-school course is made possible. This is of great advantage to the student (over 500 attending last summer) who for any reason may wish to secure a maximum of education in a minimum of time. Those who do not wish to avail themselves of this advantage or whose physical condition does not permit of the strain of continuous study, still have the opportunity of devoting four full years or longer to their high-school course.

The plan of a continuous session broken up into short terms is also of advantage to the student who from any cause fails in some part of his work, since by these frequent opportunities for readjustment he is given a chance to "catch step" again and to go on with his work in a new class with comparatively little loss of time.

DESCRIPTION OF COURSES

The courses not described are not distinctive.

English.—In the teaching of English literature, the constant aim is to make clear the relation of literature to life. A development of the power of appreciation is sought. A sense of form can be developed much better by the study of good models, where the pupils see how a master-writer puts his material together, than by the learning of rules.

Such of the college requirements as lend themselves to this treatment are retained. Only those substitutions are made which meet with the approval of the prominent scientific schools. The supplementary reading includes much that is best in invention and discovery, manufacture and distribution, and the attendant industrial and labor problems.

Wherever practicable, the composition work is co-ordinated with the other departments of the school, thus interrelating and binding together the course of study. By these means it is believed the pupil will attain that power, ease, and accuracy in the use of the English tongue which is admittedly of such great practical value as a preparation for life.

Mathematics.—The course in pure mathematics includes the usual theoretical work, the study of principles involved, and a thorough drill in mental arithmetic and the control of number.

On the technical side the pupil articulates the mathematics with the work of the drafting-room, shop, domestic science, and domestic art. Teachers of technical subjects are in constant touch with the mathematics department, anticipating problems which will arise and reporting immediately to that department any weakness shown by a pupil in problem or principle. In the Senior year advanced college mathematics is available, but for those not going to college a course in applied mathematics, composed of shop problems and elementary mechanics and electricity, is open.

Science, physiography.—The first and second terms are spent in studying physiography and meteorology. The processes of physiography and the land forms which they produce are taken up. A laboratory and field acquaintance with the common rocks is acquired during these terms.

Study of industries.—The third term is spent in studying the industries of various regions in their relations to climatic and physiographic conditions. The localization of industries and the cause of such localization can be worked out in a large measure. The location and growth of cities and the causes which govern their location and growth are pointed out. In general, the course aims to give the student an acquaintance with the physical environment in so far as it governs the physical conditions under which he lives.

Excursions to factories and other points of interest in Cleveland and vicinity are made whenever deemed profitable in connection with the study of industrial geography, industrial history, and allied subjects.

Chemistry for boys.—This chemistry is given in two separate and distinct courses.

The elementary chemistry is taken in the second year and is required of all boys. Consideration is taken of the more important elements with practical application, as far as possible. Four recitations and demonstrations, with one double laboratory period, constitute a week's work.

The advanced chemistry is taken in the fourth year and is an elective. This course is made intensely practical and includes much elementary metallurgy. The nature, uses, and methods of manufacture of charcoal, coke, iron, and steel are considered. Gas producers and types of industrial furnaces are treated. Modern practical figures and analyses are quoted and used in the discussions and problems.

Physics.—A special text has been written by the department in which much more attention is given to practical shop problems, mechanics, heat, and electricity, and less of the theory of physics and a minimum of physics of accurate measurement involved.

Electrical construction.—An electrical construction laboratory for trade classes has been equipped and sixty students are engaged in this line. A recitation devoted to theory is held daily and twenty periods per week are given to practical construction problems.

Most of the teachers of technical subjects are men with trade experience who have acquired later the art of teaching. The employment for twelve months in the year makes it possible to secure the best of teachers in competition with the manufacturers.

Drawing.—During the first two years, mechanical drawing, in so far as it applies to the shopwork only, is required. Drawings are made of shop problems and individuality of solution in place of class exercise is strictly followed out.

This subject is taught as the language through which the student learns to give graphic expression to ideas which he is later to work out in material forms in shop and workrooms. It is the one medium through which the craftsmen are able to record, clarify, and perfect such ideas as may come to them.

Training is given in accurate work by means of exercises and problems especially designed to enable the student to read intelligently the drawings which he is to use later in his shop practice. These exercises not only bring into use the various instruments in the student's equipment, but also represent some definite object to be made later in his course in joinery, wood-turning, forging, or pattern-making.

In addition to carefully constructed working drawings, free-hand sketches and views are made for the purpose of giving clear mental conceptions of the object and to teach the appearance and relation of the different views to each other, as well as to show the proper position of each on the drawing plate.

Shopwork.—Since the fundamental principles underlying all of the arts are identical, during the first two years a more or less definitely prescribed outline of instruction must be laid down. The shopwork of these two years is therefore practically a general course in manual training. The use and care of the various tools and machines, the qualities of materials and the processes of their preparation and distribution, and facility in applying the fundamental principles of construction are the chief ends sought.

This work is intended to be educative and creative as well as technically constructive. From elements and principles taught in the mechanical drawing and shop classes each pupil makes his own designs, which, when approved by the instructors concerned, he executes from working drawings. Within due limitations as to practicability and suitability of form and material, free scope is given to his inventive talent in the making of his design; but this once decided upon, he is held to strict accuracy and workmanship in its execution.

The course prescribed for the first two years is: turning, first quarter (I D); cabinet making, second and third quarters (II and III D); pattern-making and foundry practice, first quarter of second year (I C); forging, second and third quarters, second year (II and III C).

One quarter is also required in machine-shop practice at the beginning of the third year (I B). If at the end of this time peculiar adaptability in any given direction becomes evident to pupil, parent, or teacher, specialization along this line will be permitted in order that upon graduation a pupil may be better fitted for his life-work. The choice of vocation is forced upon a majority of our youth at an early age, and if a proper choice can then be made it is a great advantage.

Twenty-four periods per week are available for trade instruction in the third and fourth years.

DISTINCTIVE COURSES FOR GIRLS

The course in sex physiology.—Inasmuch as the study of the processes of life and training in observation can best be begun with a consideration of lower forms, the girls are segregated and stress is laid upon hygiene

and physiology for women. Special attention is paid to laboratory work and demonstration.

Chemistry for girls.—This course is directly correlated with domestic science and its aim is to give such experiments as will be of practical value to the girls after finishing school.

The applied work comprises the study of combustion, carbohydrates, fats, and proteins in many different phases, the manufacture of foods, the detection of the food principles in foods, such as starch in cereals, sugar in milk, etc.; the detection of adulterants, and some simple analyses, such as milk, eggs, etc.

Domestic art.—The aim here is to give such training as will enable girls as they grow to womanhood to appreciate the practical, economic, and artistic value of various materials in their application to dress and home furnishings.

The course includes plain sewing, the making of outfits for use in the departments of domestic science and domestic art, undergarments, shirtwaist suits, simple summer dresses, and millinery. Principles of handwork in the way of rolled edges, setting-in of lace, hand-run tucks, and elementary embroidery are introduced and applied to underwear. Original designs made by the pupils are used for this work and in the decoration of the table linen for the dining-room of the domestic-science department.

Millinery.—A course in spring and fall millinery is provided for girls who have learned some of the fundamental principles of sewing. Millinery affords the girls a broad expression of individuality and aims to create an appreciation of artistic color combinations and appropriateness.

The subject is closely connected with the courses in dress-making and applied art and consists in talks on materials used in millinery, wiring hats, making buckram and straw hats, wire frames, facings, building bows and covering frames, renovation of old material, and trimming hats. Attention is given to economy, simplicity, suitability, and the cultivation of artistic taste in all lines of work.

Domestic science.—The purpose of the work in this department is threefold: (1) to teach all subjects pertaining to the care and duties of a home, that girls may be prepared for practical home-keeping; (2) to teach all the theory relating to the above subject as applied science, that girls may acquire intellectual development as well as practical skill; (3) to teach institutional cookery and kitchen management as trade subjects, that students may be prepared for catering as a vocation.

Applied arts.—As mechanical drawing is made the medium of expression in the shop, so is free-hand drawing in this department. Nature forms are studied and sketched in the flat, in detail, and in color. From these studies pupils derive conventionalized units which by repetition and grouping furnish motives for original ornamental designs and for suggestions of form, proportions, and color harmonies. These they apply directly in constructive work, as in borders for garments, draperies, naperies, and in embroideries, in the decoration of pottery and leather-work; and in the designing, decorating, and making of utensils and articles of household and personal use from various materials and fabrics. The work, therefore, correlates in very definite and practical ways with dress-making, millinery, domestic science, and the mechanic arts and crafts, and with the many occasions in daily life which an intelligent appreciation of fitness and beauty adds greatly to vocational success or personal happiness.

Costume design.—For girls taking sewing in the first and second years the design and free-hand drawing is all applied work. Underwear, shirt-waists, skirts, dresses, and hats are designed and the article actually worked out from the design.

Correlation.—Domestic-science subjects are often given as themes in the English classes. See also the courses of domestic and applied arts for ways in which these are correlated with domestic science. In short, all technical subjects involving home-making are taken as the basis of the elementary courses for girls, and around these the rest of the studies are grouped.

EVENING SESSIONS

One of the most important missions which this school can fulfil is the betterment of people already engaged in a given vocation. The abolition of the apprenticeship system in the subdivision of manufacturing processes has made it practically impossible for mechanics to secure any general training which will increase their efficiency and consequently their earning power in their present position or enable them to fit themselves for a better position. There is a need among the semi-skilled working classes of an opportunity for industrial education, and to meet this need the Cleveland Technical High School offers trade courses during the evening to men and women already employed during the day.

The evening sessions are from 7:15 to 9:15 P.M. The classes are divided into two sections, one meeting Monday and Thursday evenings and the other meeting Tuesday and Friday evenings.

The entire equipment used for instruction in the day school is available for the evening classes. Instruction is offered to men in carpentry, cabinet making, pattern-making, foundry practice, tool-forging, sheet-metal work, machine-shop practice, and electrical construction. Allied with these subjects is instruction offered in trade mathematics, English, applied mechanical drawing, including architectural sheet metal and machine drawing. Complete courses in plain and hand sewing, machine sewing, spring and fall millinery, and the applied arts are available to women. Plain cooking and whatever allied courses may be called for by a sufficient number are also within the scope of the night school. Free-hand drawing, charcoal and water-color rendering, clay-modeling, book-binding, leather-work, art metal-work and design as applied to the crafts are also offered.

The present enrollment is 1,517 day-school students. There are also 450 night-school students with over ninety on the waiting list for the machinery trade classes.

INTERPRETATION OF THE TECHNICAL HIGH SCHOOL

In the public technical high schools we seem mainly to have undertaken instruction in the machinery trades, namely, pattern-making and foundry practice, forging, machine-shop practice, mechanical and architectural drawing, and industrial art. The building trades seem to have been neglected. On the other hand, in the Williamson and Wilmerding schools, great prominence has been given to these most worthy lines of instruction.

Further inspection of courses shows that an effort is being made to condense into the first two years the handwork formerly given in the manual-training high schools in four, and to devote the last two years to specialization in some one technical line. The average age of pupils entering high school is fourteen and one-half years. They are then too young to select, or are unprepared through lack of grammar-school training, to receive trade instruction. From this point of view, the two years given to manual training, which seeks to place in the student's hands as much of general industrial aptitude as possible, is well spent and makes a rational choice of trade work at a later date far more probable. It further leaves open to the student the possibility of preparing for a technical college. One of the complaints made against the technical high school has been that it is failing in its purpose of supplying the industrial unit for work at the trade and is inspiring boys to seek an

engineering education. Doubtless this provision in the course of study is wise to just that extent. The technical high school cannot and never should hope to supply the trade with its workmen, but should fit boys to enter industrial callings and at the same time should include technical college preparation.

Separate technical grammar grades.—The limited available statistics show that the graduates of technical high schools very generally follow out their lines of training and to advantage. However, there is great need in a manufacturing country for the proper training of those who are to work at the trades, particularly where the highest skill is required as in the machinery trades. This is not the function of the technical high school. In the city of Cleveland—and this is true of nearly every large manufacturing center—fifty-two out of every one hundred girls and boys who enter the first grade of the public schools never get above the fifth grade. A differentiation in the courses of study in the grammar grades is as inevitable as the differentiation that has taken place creating the separate technical high school, and is more to be desired. Most of our population is predestined by birth and environment to enter the ranks of the workers and is entitled to recognition in the preparation open to it for that work. So the separate technical grammar grades are as essential as the separate technical high schools. These grammar grades, so set aside, should have the two-fold function of preparing the boys and girls for workmanship or for further technical education. In the same way the technical high school should fit for foremanship or for the technical college. It is not so much a question of the best education as it is of some education or none. To illustrate this point by a parallel, in Cleveland there were in 1905 six public district high schools with a total attendance of about 4,800. Cleveland was growing at the rate of 18,000 per year, yet there was a growth in the high schools in 1906-7-8 of only six, though the city increased by 54,000 in population. Since then, that is, in a period of equal length, 1909-10-11, the high-school attendance of this city has increased to 7,300, or 52 per cent. This, then, is simply a case of no education in 1906-7-8 for 2,500 children balanced against vocational education for 2,100 in 1911, plus a stimulation in the attendance of over 300 pupils in the academic high schools. It is not then a question of the desirability of the separate technical high school but a question of getting the boy to attend school or allowing him to go uneducated.

If these results can be accomplished for the comparatively small number who finish the eighth grade, the results to be obtained on a basis of the same percentage by the separate technical grammar grade would affect far greater numbers. With the technical grammar grade the opportunities for highly specialized trade work in the separate technical high school will be increasingly greater and the desirability of all forms of education more and more apparent to the public. To a large percentage of the working people, education, as now conducted, seems useless beyond the fifth grade, or it is to be obtained at too great a sacrifice. A change, then, in our whole system is inevitable if we are to check our "growing illiteracy." (This is a quotation from one of the officers of the National Census Bureau.) The separate technical high school is not now able to render its maximum of usefulness to the community for the reason that the pupils entering its courses are not especially adapted to its work through the proper elementary preparation and come to the school largely by chance. Trade instruction also has to be delayed on this account.

In the organization of the separate grammar grade, however, a choice of types of education beyond that point (i.e. in the high school) must not be made impossible. That is, a change of plan must still be available and a boy from the technical grammar grade should not be hampered in his choice of a high school any more than at present. His training should be such that he could enter either an academic, a technical, or a commercial high school with little loss due to preparation.

Looking again at the curriculum of the technical high schools we see that they embrace English and mathematics in common with the academic schools. Science seems also to be a requirement of the former, though frequently an elective in the latter. The substitution of hand-work for a language other than English and a curtailment of the time given to purely academic subjects in the third and fourth year, together with an increase of time devoted to specialization in technical or shop branches, seem to be the main points of difference.

To many pupils, in fact to probably 75 per cent of those who enter the technical high schools, the opportunity to get further education is not possible, due largely to the lack of financial means. These schools must then be the finishing school for most of the boys and girls and to this end the trade instruction is useful. In the New York and Baltimore schools the opportunity to do engineering work of an elementary nature

is a particularly attractive feature. In the Stuyvesant School the equipment, by its very elaborateness, readily lends itself to this end. In fact, there are some colleges which cannot boast of so fine an equipment in their mechanical laboratories as is here available. This is true with regard to both mechanical appliances and electrical machinery. At the Crane School in Chicago the Electrical Construction Laboratory is equally elaborate, though it is reported that the equipment is of greater service to night- than to day-school pupils. In the Cleveland School the effort seems to have been in the direction of trades rather than in that of engineering lines. The field so uniquely held by the Stuyvesant School is certainly one in which other high schools could be of great service. Students wishing to enter the engineering field but to whom the colleges are not a possibility might prolong their courses two years and make the separate technical high school truly "the poor man's college." This opportunity should be made a possibility by extension of the function of our high school.

Training for technical teachers needed.—It rarely happens that manufacturers can find foremen or shop superintendents who have suitable training for their positions, and in many instances our best men are foreign-trained. There are two reasons back of this: one is the inability of the manufacturers to offer the proper training to their men, and the other is the lack of proper schools. We cannot, therefore, draw our teachers from the shops and factories except in rare instances. One of the functions of the technical schools should be to train the men, who, with adequate additional shop experience, can in turn take the positions in the technical high schools, or who will be fitted to organize the work of the grammar grades. Technical schools are now suffering as much from a lack of trained men for the teaching staff as from all other causes. Chicago seems to be the only city that has made an effort in a public way looking toward supplying the necessary teachers. In the normal courses of that city, work as now planned will fit teachers for these branches of the profession. But in a country where manual-training schools are growing up everywhere and where technical schools are filled to their capacity before the buildings are even completed, the meager supply is inadequate, to say the least. We must have normal technical training.

Summary.—In recapitulation, then, these points should be noted.
(a) Proper training must be available in grammar grades: first, for the

trades; second, for the academic school; and third, for the separate technical high school.

(b) Proper training must be available in the separate technical high school for: first, the trade foremanship; second, for high-school engineering courses and technical normal courses; and third, for technical colleges.

These are to be some of the developments in the larger cities in public secondary education in the immediate future.

IV.B. INDUSTRIAL TRAINING IN THE COSMOPOLITAN HIGH SCHOOL

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A cosmopolitan high school may be defined, from the vocational standpoint, as a high school which provides various kinds of vocational education. In such a school are combined the advantages which some communities seek to provide by establishing special types of high schools. Such a school offers many courses and trains for many vocations in one plant and under one management. Ideally, such a school will provide equal or proportional representation of all types of vocations which the children of a given community may wish to pursue.

By direction of the Secretary of this society, the writer characterizes briefly the cosmopolitan high school under his own supervision. With the opening of school in 1911, the high school at Decatur, Ill., moved into a new plant which had been under erection during the preceding years. The building was conceived and built for the purpose of accommodating a cosmopolitan high school enrolling about 1,000 students.

By the time the building was completed the faculty had developed a tentative organization of the lines of work and opportunities to be opened to students. The course provides ten groups of study; each group possesses a core or backbone of required work extending over four years. Certain elective privileges are extended in the elective and optional studies provided in each study group. The course of study which this organization displaced provided strong liberal-arts advantages and in addition a little bookkeeping, cooking, sewing, and manual training. In the present organization, the former work in the liberal arts is broadened and extended and organized into six groups of study—foreign language, English, mathematics, science, history and civics, art—each group taking its label from the lines of work constituting its core or backbone. Vocationally these groups of study are intended to equip students for further study in normal schools, colleges, universities, art schools, and schools of technology. The bookkeeping

has been displaced by lines of work affording extensive business and commercial advantages and fitting for business pursuits, office and clerical work, and for higher study in related lines. Likewise, extensive courses have been provided in the household arts in place of the limited work in cooking and sewing and in the mechanic arts in place of the work previously provided in manual training. The household-arts courses are primarily intended to fit girls for home management. At the same time they will afford large returns to those who wish to go into such trades as millinery or dressmaking, or into teaching, or to pursue advanced study in this field. The mechanic-arts course should render valuable service to those fitting for the trades and industrial work and for advanced study in schools of engineering and technology. The tenth group of study is the normal preparatory group, designed to promote the training, development, and guidance of those students who wish to teach in the public schools.

The foregoing discussion of the organization of the high-school course of study is purposely stated from the vocational standpoint, both because this is the key to its adequate interpretation and because of the standpoint assumed above in defining the cosmopolitan high school. While the preceding discussion analyzes this course of study from the point of view of vocational attainment, the other values it provides, such as discipline, culture, appreciation, and vocational discovery, are definitely sought in its administration.

The term industrial training, or education, has been and is used with various significations and contents. In his *Education for Efficiency* (p. 38), Dean Davenport employs it to include training for agriculture, the mechanic arts, household affairs, and the industries connected with manufacturing. The Committee of Ten of the National Society for the Promotion of Industrial Education (*Report*, p. 71) included in industrial education the trades and agriculture. *Bulletin No. 12* of the National Society defines (p. 19) industrial education in such a way as to distinguish it from other forms of vocational education by saying its "purpose is to fit for a trade, craft, or special division of manufacturing work." Thoughtful speakers and writers have generally accepted the content ascribed to this term in *Bulletin No. 12*, and it was evidently the intention of those who organized this *Yearbook* that it should be so defined. The term is so used in the following discussion.

The problem of the public schools in providing industrial training

is essentially one of producing skilled labor. The school must seek to render efficient and intelligent all those who are to serve society through participation in the industries. It should proceed in the solution of this problem, however, consciously guided by the fact that skilled labor is of two widely different kinds—that which depends mainly on *habit* and that which depends mainly upon *initiative*. Between the extremes of these types of labor we find a large variety of ability with various combinations of habitual action and initiative, of course.

The equipment of these two types of skilled labor is very different. The first type requires that a man shall be so drilled in the handling of particular materials in a particular way that his procedure is always the same. All of his actions are automatic responses emanating from definite, well-established habits. The second type of laborer, on the other hand, will find, as Superintendent Brooks, of Boston, shows (*Report* for 1909, p. 35), that “the overemphasizing of habit will prove a hindrance to mobility of thought and readiness in action when confronted with conditions demanding the use of judgment.” His need is not so much the ability to perform a given set of operations upon particular materials with great speed and a high degree of accuracy. Rather, his equipment consists in a knowledge of machinery, materials, and processes, and of ways and means of employing the same, with the labor available, to secure different and improved products. He must be strong in his mastery of facts and principles, in his ability to concentrate as he reasons on the plans his creative imagination evolves, in his power to draw safe, practical conclusions from the data under consideration in an actual industrial situation, and in the successful execution of plans and policies determined upon. Habit formation enters largely into the development of the laborer who is to exercise initiative mainly, but the habits formed are those which have a wide, general use. It is evident also that the ideals and tastes of the second type of laborer are quite as important as his habits.

No public high school which I have been able to study attempts to provide industrial training for the first type of laborer. The tasks he will be called upon to perform are so subdivided under modern industrial conditions that the school does not need to attempt the development of the particular skill required in such laborers. A very few days' experience in any factory will do for these laborers all that education could ever do in the development of mere skill. The school

City and School	Purpose, Aim, and Plans of School	Work Offered and Other Evidences That Industrial Training is Intended
1. Chicago: all high schools offer two years of work, advanced and intensive work in Lane Technical, Crane Technical, and Lake high schools.	Of the 11 courses announced, three definitely seek to provide industrial training: a) The manual-training course "is to prepare students for the technical industries." b) The builders' course "is to prepare students for the building industries." c) The household-arts course is "to prepare for . . . the textile trades."	Courses in printing, proof-reading, woodworking, mechanical drawing, foundry, forge, pattern-making, machine-shop practice, machine and architectural drawing, electrical or gas engine construction, brick-laying, masonry, metal-work, electrical wiring, making estimates. Work in mathematics, physiography, history, sanitation, physics, chemistry, biology taught from industrial standpoint, also attention to contracts, specifications, ordinances.
2. Cincinnati: all high schools.	Of the 9 courses announced, the technical co-operative courses for both boys and girls are definitely planned to provide industrial training. During the first two years, boys take technical laboratory work and drawing given in the manual-training course. By close of second year boys "decide what shops or trades they desire to enter." "No trade is taught in school." Co-operation in millinery and dressmaking trades only have been arranged for girls.	Courses announced are manual training, turning, cabinet and pattern making, foundry, forge, machine-shop science and practice, sewing, millinery, dress-making, tailoring, art needlework. "Mechanical drawing . . . and the work in mathematics, English, and physics is so chosen that the relation between the different subjects and the shopwork is emphasized."
3. Cleveland: the technical high school.	The two ends in view are: (1) "to prepare youths of both sexes for a definite vocation and for efficient industrial citizenship; (2) to help men and women already employed to better their vocation by increasing their technical knowledge and skill." Opportunity is afforded also to prepare for entrance to technical schools. Two years of general work are required of all; in the	The courses include printing, mechanical drawing, turning and cabinet making, foundry practice, forging, machine shop, machine sewing, dressmaking, millinery. The content of the other studies is determined by the aim of the school; e.g., the outside reading in English includes the "best in invention and discovery, manufacture and distribution, and the attendant

City and School	Purpose, Aim, and Plans of School	Work Offered and Other Evidences That Industrial Training is Intended
	last two years specialization in the direction of a vocation is expected.	industrial and labor problems; the mathematics work articulates with the work of the drafting-room, shop, domestic science, domestic art; geography emphasizes industries of various regions; chemistry is related to cooking for girls, and to nature, uses, and methods of manufacturing charcoal, coke, iron, steel."
4. Indianapolis: the manual-training high school.	Specific data were not received, but the principal of the school told me in a conference that their work so far as industrial courses are concerned is exactly like that provided in the Cleveland Technical High School.	
5. Kansas City: the manual-training high school	It is not the aim to produce mechanics any more than any other class of specialists. No special trade is taught, but the aim is to give the pupil that kind of skill and constructive ability which will enable him to take up any trade.	Courses providing work resulting in industrial training are sewing, dress-making, millinery, joinery, turning, molding, pattern-making, forging, machine toolwork. The data supplied do not indicate that work in other subjects is given an industrial bias.
6. Los Angeles: the polytechnic, mechanic-arts and manual-arts high school.	The polytechnic is the technical high school of the city. Its courses are highly specialized. The mechanic-arts high school provides advantages falling between those in the classical and technical high schools. The industrial work is presented from the educational and developmental standpoints. The manual-arts high school provides the work usually offered in a manual-training high school. Its aim in relation to industries is to bring a closer relationship between industrial pursuits and educational advantages. Each of these special high schools is really cosmopolitan in character.	Courses are provided in wood-working, forge, machine shop, machine sketching, mechanical drawing, foundry, pattern making, sewing, dressmaking, millinery, printing. Nine groups of study are provided in the polytechnic high school leading to expert ability in electrical engineering, drafting, pattern-making, forging, cabinet-making, foundry work, machine work, dressmaking, millinery. All other lines of work are presented with special reference to the technical aim of this school. The courses in the other schools are similar but fewer in number and are less highly specialized vocationally.

City and Schools	Purpose, Aim, and Plans of School	Work Offered and Other Evidences That Industrial Training is Intended
7. Louisville: Du Pont manual-training high school.	By terms fixed by donor, "no special trade shall be taught in said school." The work is "not primarily industrial but educational."	Work provided in drawing, wood-turning, joinery, pattern-making, forge, foundry, machine shop.
8. Newton, Mass.: the technical high school.	The aim of the extra technical course is to prepare "for work in the productive industries."	Courses are offered in mechanical drawing, cabinet making, wood-turning, machine and vise work, forging, pattern-making, molding, machine shop, electricity, tool-making, dressmaking, millinery, laundering, catering. All subjects in this course are taught from the industrial standpoint.
9. Springfield, Mass.: the technical high school.	The aim is to "combine and correlate practical training with a full course of academic studies." "No attempt is made to teach either the mechanical or building trades." "Aim in all departments . . . is educational, broad and practical—not narrowly vocational."	Courses are provided in weaving, sewing, pattern drafting, shirt-making, dressmaking, millinery, wood-turning, joinery, metalwork, lathework, pattern-making, forging, machine-shop work, tool- and machine-making. Same plant and equipment is used for evening school of trades.
10. St. Louis: all high schools.	The course in manual training has an industrial bearing, "but it is not the purpose of the course to teach any trade but the work embodies the principles underlying all trades." The aim of the work is educational. "By giving special attention to some one of the occupations taught in the high-schools, workmanlike skill and speed in its practice may be acquired."	Courses provided are such as are common in manual-training schools, joinery, carving, turning, molding, pattern-making, foundry, forging, machine-shop work, sewing, cutting, fitting, garment-making, millinery, laundering.
11. St. Paul: all high schools.	Courses of study are not in print for distribution yet but in each of the four new cosmopolitan high schools four years of industrial work is provided, the superintendent writes, including carpentry, wood turning, joinery, cabinet making, machine, forge, and foundry work.	

may do much, to be sure, in rendering these laborers industrially intelligent, but the training essential in securing this end is largely of the type which emphasizes the development of initiative rather than habitual action.

The controlling aims and the lines of work employed in a number of widely separated, representative general or cosmopolitan public high schools, that seek to provide industrial training which should function in the development of industrial workers of the second type and of many of the grades of labor falling between the extreme types, are briefly indicated on pp. 71-73. The data was secured from printed bulletins mainly, although it was necessary to supplement this in some cases by correspondence. It is evident that schools providing strong work in industrial education have been omitted. The list of schools investigated was made up from the writer's personal knowledge and from information received from the Secretary of this society, the Secretary of the National Education Association, the office of the Commissioner of Education for Massachusetts, and the Bureau of Education at Washington.

How wide the gap is between the statement of a school's purpose and the concrete realization of the results it promises, I am unable to determine. The belief seems fairly justified, at least, that a few schools are making a definite beginning through the co-operative plan of work or otherwise, in the provision of training in printing, carpentry, brick-laying, masonry, painting, plumbing, and in the development of the basis for a high type of appreciation and initiative in whatever phase of industrial work the student may go. In view of the results secured in evening classes with a given plant, equipment, and faculty, there seems no insurmountable reason for not securing correspondingly satisfactory results in industrial training with the regular students of the same high school.

V. THE PUBLIC TRADE SCHOOL

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In these days when the entire public instructional system of the United States is being scrutinized from within and without in the endeavor to reply to the question, "Just what do you do to prepare for vocational efficiency?" those who are actively engaged in the problem of specific vocational preparation are not exempt. Such efforts on the part of the public-school system to send out graduates trained for a definite vocation are new with the exception of higher institutions which have for years prepared students for professional lives and some high schools which instituted commercial courses including shorthand and typewriting.

Two basic questions propounded to the trade school are: Can a boy serve a successful apprenticeship in a trade school? If so, what does it cost the taxpayer? These seem to be the main questions. Those who are interested in educational work have many more questions in detail to ask.

On January 2, 1912, the Milwaukee Public School of Trades for Boys was six years of age. A brief outline of its history, organization, and results obtained during that time follows: On the evening of February 2, 1904, Mr. Frederick W. Sivy, president of the Northwestern Malleable Iron Company of Milwaukee made his inaugural address as president of the Merchants and Manufacturers' Association of that city. Among the matters recommended to be considered by the association during his term of office was the need of industrial education for the youth of the community. His suggestion met with an immediate and hearty response. A committee was appointed to gather data regarding trade schools here and abroad. Loyal support was pledged to the movement. On January 2, 1906, the school was formally opened to sixty young men eager to become skilled workmen. At first instruction in but two trades was given, namely, pattern-making and plumbing in the day and night classes. In September of the same year the machinist trade was added to the curriculum.

Early in the year 1907, a problem, which gradually had been growing more and more serious, had to be fairly met and solved. It was a question of finances. To charge students the cost of their tuition in a properly conducted trade school means to debar the very ones who need the instruction. Equally impractical is it to expect a few to bear the expense of a work so valuable to the entire community. The need of such a school was proven the first day it opened its doors. From its outset it was making better workmen and better citizens. It was the opportunity and privilege of the Merchants and Manufacturers' Association to start such a work in the life of a city, but it was not its bounden duty to continue it. The child grew beyond the power of its parent to support it. Since the work brought a rich harvest to the municipality, the municipality should bear the expense of the sowing. The solution of the problem lay in having the trade school included in the public-school system of the city. To do this, a tax, additional to the one already levied for the public schools, was necessary. This extra assessment could be collected only by the permission of the state legislature. Consequently, a bill was prepared and presented to that body early in 1907. It met with immediate indorsement in both Assembly and Senate. It passed and became effective July 1, 1907.

The Milwaukee Board of School Directors immediately seized its opportunity to take over a trade school well equipped to teach three trades and with one and one-half years' experience in pioneer work. On account of this progressive step on the part of the public-school authorities the original subscribers deeded the entire equipment of the school to the city in fee simple.

The passage of the act made two vitally necessary things possible, namely, a longer and more thorough course and free tuition. More floor space was rented and preparations made to include another trade in the curriculum, namely, a thorough course in woodworking. Instruction in this department began July 1, 1908.

On December 31, 1909, fire destroyed the main building, crippling the departments of machine, pattern-making, and woodworking. Fortunately, the entire loss was covered by insurance. Near-by temporary quarters were rented at once.

During the year 1911 the Board of School Directors authorized the erection of a Municipal Trade School. The building which is being erected is to cost without equipment approximately \$210,000.00. The

site, 300×150 feet, which was obtained by condemnation proceedings, cost \$42,500.00. It is expected two wings of 50×100 feet, and three stories high each, and the power plant will be ready for occupancy by September, 1912. Upon the completion of the new plant it is planned to include several new trades. This, briefly, is the history of the Milwaukee Public School of Trades for Boys.

It will be of interest to note that on December 1, 1909, the Board of School Directors established a Public School of Trades for Girls, which admitted girls at fourteen years of age. This school, which has a capacity for two hundred forty-five girls in day and night classes, respectively, is at present so popular that a waiting-list has become compulsory in all its sessions. It is expected by September, 1912, to be able to accommodate three hundred seventy-five pupils in day and night classes, respectively.

Before touching upon the results accomplished in the six years of its existence, a brief outline of the present organization of the boys' trade school may be of interest. The school is under the immediate supervision of an Advisory Committee of the Board of School Directors, as provided by legislative act. The school is maintained by the assessment of a special tax, not exceeding three-tenths mill, for the purpose of industrial education.

The trades taught are two manufacturing: machinist and tool-making, and pattern-making; and two building trades: woodworking, and plumbing and gas-fitting. The total capacity of the school is one hundred fifteen students in day and night classes, respectively, subdivided as follows: pattern-making, woodworking, and plumbing, twenty-five each, machinist and tool-making, forty. The length of each course is measured by the problems which must be mastered rather than by a specified amount of time. Approximately two years of fifty weeks per year and forty-four hours per week—allowing seven legal holidays per year—making the total time approximately four thousand, two hundred eighty-eight hours is the time usually required by the first three above-mentioned trades. The plumbing and gas-fitting trade requires less time. It is the aim of the school to place the student in conditions as nearly as possible like those he will meet in actual practice. School hours are from 8:00 A.M. to 12:00 M., and from 1:00 P.M. to 5:00 P.M. daily except Saturday; Saturday sessions 8:00 A.M. to 12:00 M.; evening classes 7:30 to 9:30 P.M. on Monday, Tuesday, Thursday, and Friday nights of each week from October 1 to April 30.

The course of instruction in each trade includes the following five branches:

1. Shop Practice and Trade Lectures

- | | | | | |
|------------------------------------|---|---|---|--------------------|
| 2. Drawing | { | Mechanical Drawing | { | Isometric |
| | | | | Working Drawings |
| | | | | Problems in Design |
| | | | | Architectural |
| | { | Free-hand Working Drawing | | |
| 3. Workshop Mathematics . . . | { | Shop Arithmetic | | |
| | | Shop Algebra | | |
| | | Shop Geometry | | |
| | | Shop Trigonometry | | |
| 4. Shop Inspection Trips | { | In connection with each trip a carefully written report must be submitted | | |
5. Practical talks and lectures on subjects connected with each trade, and topics fundamental to all trades.

Approximately one-fourth of the student's time during his course is devoted to mechanical drawing and to the academic instruction incidental to his trade and vitally essential to the first-class artisan whom the world needs and the school is endeavoring to develop; the remaining three-fourths being spent in actual shop practice.

A special feature of all the classroom work consists in adapting it as nearly as possible to the special requirements of the various trades. For instance, a different class of instruction is given in mechanical drawing and workshop mathematics for each trade.

A good working knowledge of elementary mathematics is highly essential to the successful mechanic and foreman, and a good course in this subject is given. While it is conceded that many other branches would prove of value to the students, it has not been deemed advisable to introduce them into the actual work of the school, but the students are urged to supplement their practical work by as much outside reading and study as possible. Home work is required of all students. They are urged to subscribe for some good trade journal along the lines of their chosen trade and keep in close touch with the latest and best methods of trade practice. It is also urged upon them to start a library of their own. The world today has excellent facilities for self-culture for the ambitious and industrious youth. Wisconsin offers the oppor-

tunities of university extension work. The advantages to be obtained by continuation work in the city night schools of both grammar and high-school grade are carefully impressed upon the graduate of this school.

It is not the purpose of the school that its graduates shall be merely skilled artisans; it is intended that they shall not only be trained and efficient, but intelligent workmen, desirous of making the most out of themselves in their chosen vocation from its every point of view.

Each student receives personal attention and instruction and no student is held back on account of the slowness of other pupils. Careful attention is paid to the formation of neat habits of work in each student, and only the best methods of procedure are taught. All work is done from drawings and no problem, either in classroom or shop, that does not have a practical application is given to a pupil. Theory and practice are closely related all through each apprenticeship. It is the purpose of the school to surround the students by the best environment and atmosphere. Habits of punctuality are encouraged and the value of the possession of a good trade impressed upon the students. The use of tobacco is not allowed on the premises.

It is also the aim of the school to secure instructors who are specialists in their line, men who are interested in the work and who can impart their knowledge and experience to apprentices.

The class of work given to the students is carefully planned to be as nearly as possible of equal educational and practical value. Thus the student's interest is aroused and held. A high standard of workmanship is demanded from every student and only those attaining it are permitted to graduate.

The night classes are planned principally to supplement the experience of apprentices and journeymen who are employed during the day at the trade in which they desire advancement under night instruction. The total day instruction of the two-year courses requires four thousand, two hundred eighty-eight hours. The total night instruction of one term of thirty-one weeks at eight hours per week amounts to two hundred forty-eight hours. Thus it is evident that none but students of exceptional ability and determination could expect to serve the entire school apprenticeship in night classes only. The school does not advise students to attempt to learn a trade by this means.

In order to qualify for admission, students must be sixteen years of

age and be able to read and write in English and perform the fundamental operations of arithmetic. Eighth-grade graduates are admitted without examination and are given preference over applicants who have not had such preparation. Since it is required by the Board of School Directors that a pupil be at least sixteen years of age in order to be admitted it is urged upon all boys desirous of entering that they take advantage of every opportunity offered by the public-school system up to the age when they are eligible for admission to this school.

Boys who have graduated from the eighth grade and who desire to attend the Trade School, but who are below the age at which they may enter, will be allowed to pursue in the high schools, until they reach the trade-school age, those studies which will be of most help to them in their future work in this school.

The cost of maintaining this school is approximately two hundred and fifty dollars per year for each pupil. Thus in two years a boy receives an education costing from four hundred to five hundred dollars, and by means of it, the advantage of a start in life of inestimable value.

Tuition is free to boys who are residents of Milwaukee and between the ages of sixteen and twenty. They are required to pay \$1.00 per month for materials. Residents over twenty are required to pay \$5.00 per month, which includes material charges. Non-residents are required to pay \$15.00 per month, which also includes material charges. Instruction is given in night classes four evenings per week from October 1 to April 30, two hours each evening, with charges as follows: Residents between sixteen and twenty, tuition free and fifty cents per month for material charge; residents over twenty, \$1.00 per month for tuition and materials; all non-residents, \$4.00 per month for tuition and materials.

In complying with the request of the Wisconsin Legislative Committee on Industrial Education in the spring of this year for information regarding attendance and per capita cost and the number of graduates the following information was found. These figures include enrolment from January 2, 1906, to April 1, 1911.

TOTAL NUMBER PUPILS ENTERED

Trade	Day	Night
Pattern-making.....	89	105
Machinists.....	132	215
Plumbing.....	119	214
Woodworking.....	28	46
Cable splicing.....	17	...
Mechanical drawing.....	...	22
	385	602

AVERAGE LENGTH OF ATTENDANCE OF PUPILS

	Day	Night
Pattern-making.....	11.4 mos.	4.5 mos.
Machinists.....	7.7 mos.	4.6 mos.
Plumbing.....	3.4 mos.	3.7 mos.
Woodworking.....	9.3 mos.	4.7 mos.
Final average.....	8 mos.	4.4 mos.

CLASSIFICATION OF ATTENDANCE

Day Classes					Night Classes				
24 pupils or	7 %	remained	24 mos.		1 pupil or	.2 %	remained	27 mos.	
9 " "	2 1/2 %	"	21 "		3 " "	.5 %	"	22 "	
18 " "	5 %	"	16 "		1 " "	.2 %	"	21 "	
15 " "	4 %	"	13 "		1 " "	.2 %	"	19 "	
8 " "	2 1/2 %	"	12 "		2 " "	.3 %	"	18 "	
5 " "	1 1/2 %	"	11 "		11 " "	2. %	"	14 "	
12 " "	3 1/2 %	"	10 "		4 " "	.7 %	"	13 "	
15 " "	4 1/2 %	"	9 "		4 " "	.7 %	"	12 "	
16 " "	4 1/2 %	"	8 "		4 " "	.7 %	"	11 "	
24 " "	7 %	"	7 "		4 " "	.7 %	"	10 "	
32 " "	9 1/4 %	"	6 "		11 " "	2.0 %	"	9 "	
19 " "	5 1/2 %	"	5 "		13 " "	2.0 %	"	8 "	
35 " "	10 %	"	4 "		61 " "	12.0 %	"	7 "	
22 " "	6 1/4 %	"	3 "		64 " "	12.4 %	"	6 "	
30 " "	8 1/2 %	"	2 "		35 " "	7.0 %	"	5 "	
48 " "	13 1/2 %	"	1 "		51 " "	10.0 %	"	4 "	
18 " "	5 %	"	1 "		52 " "	10.0 %	"	3 "	
			less than		64 " "	12.4 %	"	2 "	
350	100 %		1 mo		109 " "	21.0 %	"	1 "	
35*					26 " "	5.0 %	"	less than	
								1 mo.	
385					521	100 %			
					81*				
					602				

* These students were enrolled during first six months of school. No data was made of their ages.

AVERAGE AGE OF PUPILS ON ENTERING

19 years in day classes

21 years in night classes

CLASSIFICATION OF AGE OF PUPILS ON ENTERING

Day Classes						Night Classes					
129 students or 37 % enter at 16 yrs.						60 students or 11.5% enter at 16 yrs.					
67	"	"	19 %	"	"	17	"	"	18.0%	"	"
42	"	"	14 %	"	"	18	"	"	18.5%	"	"
30	"	"	9 %	"	"	19	"	"	12.4%	"	"
24	"	"	6 %	"	"	20	"	"	7.4%	"	"
15	"	"	3 1/2 %	"	"	21	"	"	5.2%	"	"
9	"	"	2 1/2 %	"	"	22	"	"	5.3%	"	"
8	"	"	2 1/2 %	"	"	23	"	"	2.5%	"	"
3	"	"	1 1/2 %	"	"	24	"	"	2.0%	"	"
2	"	"	1 1/2 %	"	"	25	"	"	3.0%	"	"
5	"	"	1 1/2 %	"	"	26	"	"	3.0%	"	"
2	"	"	1 1/2 %	"	"	27	"	"	2.0%	"	"
4	"	"	1 %	"	"	28	"	"	1.0%	"	"
3	"	"	1 1/2 %	"	"	30	"	"	1.0%	"	"
1	"	"	1 1/2 %	"	"	34	"	"	2.0%	"	"
4	"	"	1 %	"	"	38	"	"	.3%	"	"
2	"	"	1 1/2 %	"	"	42	"	"	.7%	"	"
<hr/>						<hr/>					
350			100 %			521			100 %		
35*						81*					
<hr/>						<hr/>					
385						602					

* These students were enrolled during first six months of school. No data was made of their ages.

NUMBER OF GRADUATES

Pattern-makers.....	12
Machinists.....	12
Plumbers.....	10
<hr/>	
	34

AVERAGE WAGES BEING RECEIVED BY GRADUATES

(Having left school at an average of 11½ months)

Pattern-makers.....	31.8 cents per hour
Machinists.....	32.6 cents per hour
Plumbers.....	53.2 cents per hour
	<hr/>
	117.6 cents
Average.....	39.0 cents per hour

The per capita cost is approximately \$250.00 per year.

A brief discussion of above data may prove helpful to those considering the establishment of trade schools. The bald fact that out of three hundred eighty-five students, enrolled in day classes only, in five and one-fourth years but 7 per cent graduate is likely to be claimed as an irrefutable argument against trade schools by those antagonistic to such institutions in any form or location, or in the public-school system. To even state that the average length of time spent by all the day pupils is but eight months is likely to receive a none too hearty welcome. The cost of the help given all these young men can be computed to a cent but the value received by these three hundred eighty-five hungry lives in day classes and six hundred two in night classes is immeasurable.

The chief cause of disappointment to all educators is the fact that pupils do not stay longer in school and their greatest problem is to find ways and means to diminish the ebb flow. Aside from schools which prepare for the professions practically all schools are academic. The majority of the pupils in academic schools do not expect to use their specific training in their bread-earning work, but the attitude of the pupil who enters a school which trains for specific efficiency, coupled with the desire to be an earner, to be free and do with his earnings as he wishes, makes him shortsighted. This same question of discouragingly small harvests from a costly sowing is witnessed daily in other efforts to advance the efficiency and betterment of the community. The money spent by churches, the outlay for Young Men's and Young Women's Christian Associations, the money and effort advanced for the propaganda to stem the scourge of the white plague, the tireless labor expended for multitudinous philanthropic ends—none bring in the harvest which we fain would witness. It is not a question of becoming impatient, discouraged, or disgusted; it is a matter requiring thorough analysis, an

honest acceptance of what the analysis reveals, and a fearless and tireless effort to remedy the weak places and reinforce the strong ones.

The fact that the graduate of a trade school can make a better showing, both as to the quality and amount of his industrial intelligence and also his earning power, at the end of four years from entering school than the commercial apprentice graduate can in the same length of time from starting his apprenticeship, proves that the cause of short attendance is exterior to the school.

The comparative per capita cost between different schools depends upon the trades taught, the equipment for each trade, and the kind of courses offered and the number of pupils in each trade.

Analyzing all the trades in the world it is found that they come under one of two heads—building trades or manufacturing trades. Analyzing farther it is found that all the building trades are dependent upon the manufacturing trades and all the manufacturing trades are based upon four fundamental trades. These are, in logical order, the drafting, pattern-making, molding, and machinist trades. Several striking facts should be briefly noted regarding these four basic industries. They are all vitally united—they form a series of closely allied, correlated, and inseparable steps, and are the beginnings of things in all the world's industries. A baker is a manufacturer; with flour, water, yeast, and other ingredients, all mixed and baked according to a certain formula, he makes bread. From raw materials he gives us immediately a finished product. The manufacturer of steam engines cannot put pig iron in his cupola, mix it with a certain per cent of scrap iron, melt all together and make the finished product of a steam engine by pouring the molten metal into a mold. First the design must be made, then the patterns prepared, castings must next be poured in the foundry, and the machine shop must finish and assemble the parts.

Another important point that must be noted, as bearing upon the cost of trade-school equipment is the rapidly increasing ratio of skilled workers needed in these four trades as the evolution of the steam engine progresses. It is very difficult to obtain absolute figures on this point, but probably a fair average is as follows: Five draftsmen will keep from fifteen to twenty-five pattern-makers busy, fifteen pattern-makers will keep fifty to seventy-five molders employed, and fifty molders will keep from one hundred fifty to two hundred machinists employed. Also to be considered is the fact that in approximately the same ratio the cost

of equipment of the four trades advances. Thus it is evident that first-class machinists are far more in demand than the artisans of any other manufacturing trade. Also it is evident that the equipment of the machine shop is the most costly. School-board directors in cities and municipalities must face this problem fairly and not evade it. A city can well afford to retrench along other lines in order to advance the cause of industrial education. The cost of installation for all the building trades is considerably less than that of the fundamental manufacturing industries. So the equipment of our trade schools should be of the best available tools and machinery. The right trade school should be, not only a source of education to the apprentice, but also to the manufacturer in many ways. The trade school should stand for the highest and best along every line.

Another problem to be met is how to dispose of the products of the school. The Milwaukee Board of School Directors, in endeavoring to solve this problem, passed the following resolution: "*Resolved*, That in accordance with chap. 122, secs. 926-27, Laws of 1907, State of Wisconsin, the products of the Milwaukee School of Trades may be sold in open market at prevailing market prices." When the average length of time of remaining in trade school is lengthened the quality of output of each student will be of higher and higher value, and the returns to the school correspondingly larger and the cost to the taxpayer smaller. In this school much of the output from some of the shops is used in the schools of the city.

The cost of the high-school student per year in Milwaukee is approximately \$60.00, or \$240.00 for his four-year course. The cost of the trade-school graduate is approximately twice this amount for two years, but the trade-school graduate is worth, on leaving school, between three and four times the amount of the high-school graduate who has not had special vocational training in his secondary-school work.

But there is another point from which the municipal trade school may be viewed—that of vocational inspiration. Perplexing as the problem of vocational training for the boy above sixteen years of age may prove to a city, much more difficult is the question to answer rightly what to do with the fourteen- to sixteen-year-old boy who wishes to leave school at fourteen or when completing the grammar-grade work. There are few questions more vital for each boy and girl to answer ere they reach maturity than what their choice of vocation

will be. By rights it should not be necessary for any youth to make such a choice so far-reaching in its results until a good grasp of its import is known to him. And yet in spite of the *individual* and *national* gravity of the matter there is no problem which enters the individual life of a large majority of our youth that is given less serious thought by them, by many parents, by employers, and by boards of education. Just as long as the law permits the departments of education of our country to release their hold on our youth at the age of fourteen just so long will the youth, the nation's greatest asset, be exploited in many ways and all to the loss of the individual exploited.

Between hesitation on the part of boards of education to provide vocational training on the one hand and compelling statistics from the public schools on the other, we are filling the blind-alley occupations with a pitiful supply of what by a merciful interference would make an efficient and grateful CONSERVATION.

In European countries it is the rule rather than the exception that the son learns and follows the trade of his father. In this country the methods of keen competition between many private business colleges assist materially in making the reverse condition true. These private institutions compete with the excellent commercial courses offered free in the high schools of many of our cities. So keen is this competition for students that the addresses of the boys and girls in the eighth grade are paid for in order that the representatives of these private commercial colleges may call upon the parents to bring pressure upon them to send their sons or daughters to these schools. Positions are promised to graduates. By this means many of our boys and girls receive a wrong impression of the true value of an artisan's life simply because a position which permits of white collar and cuffs and clean clothes is made to appeal to them. I look, if not with suspicion, at least with anxious curiosity upon any system of education whereby those who offer it make their livelihood from struggling parents, who already pay taxes in order to offer the same instruction free and in a better way to their children. It is evident that a thorough commercial course in connection with a four-year high-school schedule, with its thorough drill in literature and composition, will make such a graduate of more intrinsic value to the employer than a hasty, crowded course of a year or so in a business college. This does not imply that there are not some good private business colleges or that they do not have their place, but school boards

should know their methods of procedure and take steps to meet their competition by educating both parents and pupils to an appreciation of what a complete high-school commercial course offers.

The city which is fortunate enough to have a municipal trade school in its public-school system can hold before every boy, ere he reaches the age of fourteen, the incentive to remain in school and make the most of himself while he has the opportunity. This can be done by having properly organized and conducted inspection trips for all the boys under fourteen in the public and other schools of the city under the supervision of their respective principals to the trade-school classes while under working conditions. Before leaving the trade school they should be reminded that they must soon leave the school which has been their school home for eight years. Where are they going to? What do they plan to do? What would they like to become? Some have been thinking about the matter, some have never given it a thought. Since they must all make some choice in a few months it is vitally important that they be informed of the heritage which is theirs. They may go on to the high school and choose any of the courses offered there, one of them being a thorough commercial course; they may go on from the high school to the normal school and fit themselves for educational work; or to the university and prepare for a professional life; or they may take the preparatory course at the trade school and afterward the regular trade-school course and prepare for the life of a skilled artisan. They are reminded that it makes little difference what one chooses for his life-work providing he chooses the thing which he feels born to do and that something requires STUDY and TRAINING to reach its highest plane. All must work at something. They are also reminded that a very small percentage of the thousands whom they pass daily, going to and from work, are going to and from a work which they were born, or which they were especially trained, to do. If they prefer the life of an artisan, employers much prefer to hire the trade-school graduate than to try to train him in their shops. Their attention can be called, for instance—to use an illustration given in Milwaukee Trade School during such seventh- and eighth-grade inspection trips—to a modern gear-cutter, made of cast iron and steel and weighing about one ton. The bulk of raw material from which this machine was made was worth about fifty dollars. The machine cost the school one thousand and thirty-five dollars. The difference in price between fifty dollars for the raw material

and the one thousand and thirty-five dollars for the finished tool represented the work and skill required to change the crude stock into an efficient machine. The value of the skilled mechanic, the trained business man, the experienced educator, or the successful professional man over the untrained worker in any walk of life is the amount of self-effort exerted by the individual in trying to reach some goal or ideal. This illustration hits the desired mark, for they have just seen these ingenious workings of the costly tool. The raw material of this high-priced machine might have been melted into rough window weights and sold for but little more than the price of pig iron, or it could be worked into a valuable, useful tool. Do these boys wish to remain practically raw material by beginning as messenger boys and ending by becoming automatons who offer for sale the muscles of their arms and legs, or do they wish to make out of themselves skilled, efficient citizens?

For the boy of fourteen who has completed the eighth grade and who wishes to learn a trade there should be a preparatory department of the trade school where he could learn many things helpful to the skilled artisan while waiting until he can with profit to himself and the community begin upon his regular trade-school course.

The influence of the trade school should also reach out to help a certain class of boys who perhaps cannot for various reasons complete the eighth grade, but who, if saved from employments which will lead them nowhere, would make good artisans at some chosen trade. The best place for trade schools is in the public-school system, and its specific place in that system is where it can help directly and indirectly the boys and girls who feel the desire or need to go to work, and its influence should be available when that desire or need presents itself. Its opportunities should be flexible and not only teach a thorough apprenticeship but also assist in continuation work, and part time instruction if necessary. Its strategic position can be used as a power for vocational inspiration equal to, if not greater than, its opportunity for actual trade teaching.

VI. THE PART-TIME CO-OPERATIVE PLAN OF INDUSTRIAL EDUCATION

ADELBERT L. SAFFORD

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The co-operative plan of industrial education is primarily an attempt to co-ordinate and correlate agencies already existing, at least potentially, in the factory and the school in order to make better workmen and better citizens from the young recruits to the industries. Because the co-operative plan can be undertaken with very little initial investment, maintained at a minimum cost, and adapted to a great variety of conditions, it is the form of industrial education most widely available for immediate realization. Some entertain doubts of the adequacy of the co-operative school in comparison with the independent trade school on the one hand and the manufacturer's apprenticeship school on the other. The co-operative school with shop practice under factory conditions is more practical than the independent school, dependent on its own shops, but the co-operative school runs the risk of having the shop-work subordinated to other interests not consistent with the greatest thoroughness and progress in learning the trade. The co-operative school with its schoolroom work carried on in an efficient school with established standards of its own in equipment, administration, and pedagogical efficiency has a great advantage over the manufacturer's apprenticeship school carried on wholly within the factory; but on the other hand, there is danger that the school work of the co-operative school may not be made to correlate closely with the factory work. The principal difficulty seems to be in securing the right kind of co-operation. It has been shown that the half-time co-operative schools under favorable conditions may become very efficient and possess many advantages over schools of other forms. The short-time co-operative school having less than half-time, usually four hours a week for school work, is less ambitious in its aims than the half-time school and serves a somewhat different purpose.

METHODS OF CO-OPERATION

In all industrial education there are several parties in interest: the manufacturer, the workmen, the pupils, and the public. For the purposes of our discussion the interest of the pupils may be considered as part of the interest of the public. In the public co-operative industrial school the three principal parties in interest may become active participants in the management of the school. It is in the harmonizing and fulfilling of the legitimate aspirations of these three parties in interest that the co-operative school encounters its greatest difficulties and achieves its greatest excellence.

The parties in interest have much in common, but each places greatest stress on some feature that beyond a certain point becomes antagonistic or prejudicial to the interests of the others. The manufacturer properly desires a supply of efficient workmen adequate for the legitimate demands of his industry. If, beyond that, he desires to provide a surplus of workmen in order to reduce wages or break a strike, he antagonizes other interests; if he is concerned merely in speed of production, being indifferent to the social welfare of the workmen; or if he is concerned merely with the immediate usefulness of the apprentice to the industry, being indifferent to his progress in his trade, the manufacturer fails to contribute his full share to the fulfilment of the common purpose; if the manufacturer pays the apprentice less than he earns, that is, if the article produced by the apprentice costs less than the same article produced in the regular factory routine, then the manufacturer is again not dealing equitably with the other interests concerned.

Thoughtful workmen desire to recruit their ranks by means properly safeguarded in order that the industry which gives them employment may prosper and pay them good wages and give employment to their children. If the workmen desire to restrict the supply of labor unduly, or attempt to monopolize the right to work at a particular trade, or resist the introduction of improved methods of management and work, they deprive the manufacturer and the public of their lawful interests.

The first concern of the public is that each person, whether engaged in the industries or elsewhere, shall perform his part in the social organism intelligently, efficiently, respectably, and happily. Ability to do well some kind of productive work is fundamental to social efficiency. It is therefore pre-eminently a matter of public concern to train young recruits for the industries and to insure for them a reasonably free and

fair entrance into the vocation in which they are to achieve self-support and make their contribution to the social welfare. The public interest is comprehensive and, rightly conceived, may include all that is legitimate in the claims of the manufacturer and the workmen. Public control of co-operative industrial schools is able to harmonize the interests of the manufacturer and of the workmen, while effectively securing what is so often sacrificed in the controversies between labor and capital—the welfare of the general public. In the management of such a school the manufacturer, the workmen, and the public should all be represented, but the degree of success of the administration will be largely determined by the extent to which they merge their interests into one control for both factory work and school work.

SHOPWORK

In order to show the relation of the shop work of the co-operative school to that of other schools it is convenient to classify the various forms according to the purposes they serve as: (a) cultural, (b) preliminary trade training, (c) trade training.

Undoubtedly the use of tools in making things by any boy or girl reacts through the sense perceptions on the whole mental fabric, much as Professor Seguin's system of sense-training reacted upon the mentality of the feeble-minded, stimulating and developing it. The one or two hours a week usually given to such work in the public schools might profitably be extended by school or home tasks to five or ten hours a week for purely cultural reasons. Some slight vocational ends are also served by this work, but as a rule it has no point of contact with real trade-training and should be classified as cultural. Another kind of shopwork introduces the pupil systematically to different machines, materials, and processes belonging to a particular trade or group of related trades, but does so in an experimental way only, not attempting to provide the methods, facility, and experience necessary for production on a commercial basis. As a rule pupils in this class of shopwork make only one article of a kind during their course. There is no commercial product or factory system. Such work must be regarded as preliminary trade-training, if indeed it justly escapes the characterization of dilettante, because incapable of being turned to practical account. Good schools of this class are of great value to pupils preparing for higher technical courses for engineers, superintendents, and

foremen, and may prepare for apprenticeship. They do not provide a point of contact for direct entrance to the industry. Shopwork that gives real trade training conforms closely enough to factory requirements to turn out at the end of the course a workman whom the manufacturer will readily employ as a young journeyman. Some schools maintaining shopwork of this character, however, attempt to provide only a part of the whole course required for complete mastery of the trade. This kind of shopwork produces a commercial product which pays for raw materials, usually provides wages for pupils, and may be made to pay overhead charges if properly managed.

TRADE TRAINING IN SCHOOL SHOPS

Many philanthropic trade schools and several public trade schools produce a commercial product in their own school shops. There are many difficulties involved in this undertaking that must be set over against the difficulties of the co-operative plan. In the minds of some the balance is largely in favor of the co-operative plan, whether we consider efficiency in trade-training or problems of administration. Schools that maintain their own shops are at a serious disadvantage, both in the purchasing of raw materials and in the marketing of products. They must establish and maintain their own standards of efficiency in workmanship, speed of production, and *esprit de corps*. Moreover, there is an important psychological effect upon the boy or girl on being brought into contact with the factory in full action: it appeals to the imagination; it is an adventure in an undiscovered country; it ministers to the insatiable desire of youth to know the world. There are apt to be many advantages in equipment provided by the manufacturer in the factory. Such equipment is presumably of the type best suited to economical production; at least it is such as enables the manufacturer to conduct his business successfully. The adaptation of machine tools to the tasks imposed constantly taxes the skill of the inventor and the judgment of the manufacturer as well, who would soon be outstripped by his competitors if he failed to send out-of-date machinery to the scrap heap. I cannot see how a school in which the machine tools were not required to show their adequacy in the cost sheets of production could ever grasp the problem of suitable equipment for the highest productive efficiency, or how a school in which the machine tools did not by a commercial product earn a suitable sum to be set aside for interest and depreciation

could afford to keep its equipment up to date by discarding types of machines and methods that were unprofitable for factory use. While the problem of equipment belongs primarily to the manufacturer, the workman's experience is indelibly impressed by it, and his whole attitude toward his work, as well as his competency as a workman, are materially affected. In the co-operative school the business acumen and experience of the manufacturer are actively enlisted in the management of the school and the completely organized purchasing, selling, and accounting facilities of the factory serve the school at the same rate as the factory.

Nevertheless, it must be admitted that to insure the management of shopwork so as to afford thorough instruction, steady advancement, and comprehensive practice in the various details of the trade are the gravest problems of the co-operative school. In this respect the independent trade school has its greatest advantage. It has been boldly claimed even that "modern industrial methods preclude the giving of such instruction in commercial shops." All must admit the danger that such instruction may be meager, haphazard, or too much interfered with by the exigencies of the factory.

FULL RESPONSIBILITY FOR SHOPWORK

To guard against the danger just discussed, co-operative schools should assume full responsibility for the character of the shopwork. The supposition that the manufacturer would not agree to such a plan is hasty and not well founded. He may be led to see that under a suitable plan in which he has a voice full responsibility by the school may be decidedly to his advantage. The Beverly Industrial School is a half-time co-operative school, having full responsibility and control of the shopwork done in the factory of the United Shoe Machinery Company. The Wisconsin Commission on Industrial Training says of the Beverly plan, "The remarkable point and the safe point, both from the standpoint of capital and labor, and also from the standpoint of true industrial education, is that the arrangement is controlled entirely by a committee." The committee consists of five members of the school board, the mayor, and the assistant superintendent of the factory. The superintendent of schools is the secretary and executive officer of the committee and has general supervision of the school. The assistant superintendent of the factory is chairman of a subcommittee of three on instruction in the school. He co-operates with the superintendent

of schools and the director of the industrial school, and he attends to many of the details of management of the shopwork, but is subject in all these matters to the direction of the committee in charge of the industrial school. In no other way does the management of the factory exercise any authority over the school. The manufacturer's redress is to withdraw co-operation. The Commissioner of Labor in his report of the Beverly school calls attention to the fact "that should the company choose to withdraw its co-operation the school might be compelled to discontinue its work." This must be true of all co-operative schools, since co-operation is not compulsory; but there appears to be no good reason why the manufacturer should wish the school to discontinue its work so long as it is properly conducted.

The idea that such a school is a heavy financial burden to the manufacturer is erroneous. The apprenticeship schools maintained by the corporations are self-supporting, including the cost of theoretical instruction. In the co-operative school, with the theoretical instruction carried on at public expense, there is no sufficient cause why the shopwork may not be self-supporting.

The factory work at Beverly is arranged so that a group of twenty-five boys works in a separate department of the factory in charge of a school instructor as foreman. On the following week the same instructor teaches this group at the school, thus making possible the highest degree of co-ordination and correlation between the shopwork and the school work. The first two instructors of this kind (machinist-instructors in charge of pupils in factory on alternate weeks) in the Beverly school had the following qualifications: R. H. L., with Div. A, four years as apprentice with Fay & Scott, Dexter, Me.; two and one-half years in manufacturing and in tool departments of United Shoe Machinery Co.; three years as machinist in U.S. Navy; one-half year as machinist in U.S. Navy Yard at Brooklyn; graduate of Pratt Institute; six and one-half years as draftsman, and one and one-half years as assistant chief draftsman with the United Shoe Machinery Co.; three years as instructor in machine drawing in the Beverly evening school; one year as instructor in machine drawing in evening classes in Franklin Union, Boston; P. D. S. with Div. B, graduate of Richmond Academy, Augusta, Ga., and Rhode Island School of Design; four years an apprentice, one year instructor of apprentices with Brown & Sharpe Mfg. Co., Providence, R.I.; two months in charge of apprentices with Bullard

Machine Tool Works, Bridgeport, Conn.; three years in tool department, three years in drafting room with the United Shoe Machinery Co.

The boys in the Beverly school do not come under the instruction or supervision of the ordinary shop foreman, do not work beside the regular workmen, and do not share with the regular workmen the use of machine tools. The work to be performed is chosen with reference to the pupils' needs and usually consists of reserve orders for small quantities that need not be rushed.

PART RESPONSIBILITY FOR SHOPWORK

If on account of the boys being scattered through many shops or for other reasons full control of shopwork by the school is not feasible, the manufacturer should be made by agreement answerable to the school authorities for the treatment given the pupils in the factory. Co-ordinators should visit the boys at work frequently, not only to correlate the work but to see that the boy is making suitable progress in the trade and is not exploited selfishly by the manufacturer. The Fitchburg school assumes part responsibility for the shopwork, but there is a lack of definiteness in its requirements of the manufacturers. The director of the school says, "By weekly visits to the shops and inquiries of the boys in their school week, I keep in touch with their work. Should a boy feel he is not getting just what he should he is not at all slow in making the fact known. Then, by taking the matter up with the proprietors and foremen, we soon find out whether or not a change should be made."

NO RESPONSIBILITY FOR SHOPWORK

A few half-time schools and most of the short-time schools (usually four hours a week) assume no responsibility for the character of the shopwork, the wages of the pupil, or any other matters concerning his progress and general welfare outside of the classroom. It is very difficult for the manufacturer, unaided by the school, unless he organizes a regular apprenticeship course, to carry on the shopwork with a due consideration for all the interests represented in the young worker. Few ordinary shop foremen burdened with their regular duties have the time, skill, or inclination to give systematic instruction to apprentices; owing to the extreme specialization in the American factory system, only

one class of operations can be learned in one department; and after a foreman has "broken in" a new boy and made him self-directing and profitable, he is likely to hold him as long as possible. Often the boy himself, misled by larger wages, is content to remain too long on one kind of work. Lewis Institute is maintaining a half-time course without responsibility for shopwork. "The manufacturers have shown their interest in their apprentices by being willing to incur the inconvenience of changing from week to week the boys who are working on a job, besides paying their tuition of fifty dollars a year. It was contemplated that the boys would pay the tuition out of their earnings." A philanthropist is paying the tuition of pupils in this school at present. The Ranken School of Mechanical Trades has a similar co-operative course for "boys employed during the day. The employer pays the tuition fee of fifteen dollars a year." This is a short-time course of seven hours a week. The Cincinnati Continuation School has a typical short-time co-operative course four hours a week, without responsibility for shop work. The city provides "the necessary teachers and general equipment for a school of industrial instruction while the manufacturers pledged themselves to send a sufficient number of apprentices to justify the establishment of the school."

The radical differences in the three types of co-operation in shopwork are due not so much to local conditions as to different conceptions of the functions of the school. The full responsibility plan aims at social welfare through public control while serving adequately each subordinate interest. It is not deemed necessary that the pupils should be indentured, the manufacturer restrained from terminating his co-operation after reasonable notice, or the authority of the school instructors over shopwork restricted. This is the highest type of co-operation and should be approximated as closely as possible wherever half-time schools are established. Short-time schools are a palliative, but not a cure, for the lack of intelligent and technically trained workmen. They represent perhaps the minimum requirement which should be made compulsory for all persons under eighteen years of age engaged in the industries. The report of the Wisconsin Commission on Industrial Education aptly says: "Your commission believes in doing something where nothing has been done . . . in meeting in some way, however meager, the immediate wants of the many. . . . The continuation (short-time) school may be only a stop-gap, but it meets the broadest aim and it will at once reach the greatest number at the least cost."

UNIT GROUP CO-OPERATIVE SCHOOL

For highly specialized industries, such as boot- and shoe-making, a somewhat different type of co-operative school seems feasible though not yet established so far as I know. There are from sixty to eighty operations to be performed in manufacturing an ordinary shoe. The related processes may be grouped into units, such as cutting, lasting, stitching, finishing. An association of manufacturers in a particular industry of this sort could distribute among the different factories the maintenance of the required school units for teaching the whole trade. Pupils could be enrolled for each unit separately, as in the short agricultural courses, in the slack-time classes, and in evening classes in general, but with this difference, that the shopwork would be closely correlated with the school work. Each unit would represent a link in the chain which, completed, would embrace the whole practice of the industry. A pupil completing one unit would be ready to enter the industry as a worker in that one line; a pupil completing the several units would be master of the combined processes of the industry.

PUPIL'S WAGES IN CO-OPERATIVE SCHOOLS

An essential principle in the economical management of trade schools is the utilization of the product of the pupils' labor to pay for raw materials and "overhead" charges and to afford the pupil remuneration for his labor in proportion to his competency as a workman. It is desirable for many reasons that pupils should earn wages; youths from fourteen to eighteen years of age have a passion for earning money like adults; sometimes the money is necessary for their support; but most important of all, wages may be made a powerful incentive to good workmanship and speed of production. One of the great advantages of the co-operative school over the independent school is the greater ease with which pupils may be provided with an abundance of productive work. Paying pupils by the hour for both schoolroom and shopwork is the prevailing custom in co-operative and apprenticeship schools, but each pupil should be rewarded in proportion to his achievements as a workman. Paying the pupil for school work by taking half his shop earnings for that purpose is false pretenses, comparable with much advertised social-betterment schemes that distract attention from an unjust wage scale. Whatever objections may be justly urged against the piece price or task price for regular workmen, it certainly has great advantages for pupils in trade schools. The pay envelope is then to

the pupil a constant measure of his productive efficiency, both in the use of time and in the standards of workmanship. Thus the proper balance between speed and good workmanship is constantly and automatically impressed on him.

When the shopwork is carried on in a separate department of the factory, as at Beverly, the accounts should show clearly the net earnings of the shop. This is the amount that should be distributed to the pupils as wages. The equipment account is debited with the value of all machine tools and permanent equipment and is credited from time to time with interest and depreciation charged up on the operating account and with machines and equipment returned to the manufacturer. The operating account is debited with the cost of raw materials, salary of instructor while in charge of shopwork, salary of shop assistant, wages of pupils, and overhead charges, representing power, light, heat, rental of floor space, interest and depreciation on machinery, accident-liability insurance, and cost of accounting. The operating account is credited with the value of all the product passed by the inspector. The value of the school product is determined by the cost sheets of the same articles produced in the regular routine of the factory. In Beverly it was assumed at the start that one-half the piece price was the proper amount to pay the pupil. At first there was rather a large deficit, but the deficit grew steadily less, so that it became apparent that the enterprise would soon be self-supporting on the half-price basis. As pupils reach the third and fourth years of shopwork their wages should more and more nearly approximate those paid regular workmen. The instructor must control systematically the progress from one machine to another and must curb any tendencies of the pupil to desire to earn rather than learn. The shopwork, after it is once under way, can and ought to be self-supporting, but it should never be a source of profit to the manufacturer, as it seems to have been in apprenticeship schools in some cases. One week in the school followed by one week in the factory is the usual plan of alternation. The State Trade School at Bridgeport, Conn., has a half-time scheme with two-week periods instead of one-week. In the Fitchburg, Cincinnati, and Providence high schools the co-operative classes have the same vacations as the public schools, so far as classroom work is concerned, but work full time in the factory in the summer vacation. Also, each pupil on the school week spends Saturday forenoon with his mate in the factory in order to be prepared to take his

place in the factory for the following week. In Beverly the school work continues forty-eight to fifty weeks a year, the same as the factory work, but on the school week the pupils have Saturday free. The machinist-instructor goes to the factory on Saturday of the school week to prepare to take charge of the shopwork on the following week. Long periods of alternation destroy close correlation between school work and shopwork and are undesirable except for slack-time classes. An indispensable feature of a co-operative school is the keeping by the pupil of a fairly complete record of all his shopwork. This record should include amount and description of articles worked on, time spent, free-hand dimensional sketches of articles manufactured, machines and other tools used, and problems that had to be solved. These records should be summarized to show general scope of the shopwork and number of hours devoted to the different parts of the trade. At Beverly it is deemed best for the boys to use jigs and similar labor-saving devices employed in reproducing standard machine parts until they have gained confidence and judgment in the operation of the machine tools; then they are taught to manufacture tools and jigs and experimental parts of machines. By using jigs at the start, pupils can immediately earn a considerable wage and later the teaching of operations without jigs is much simpler because the pupil understands how to use the machine tools to best advantage.

GENERAL FEATURES OF CO-OPERATIVE SCHOOLS

The public in America is only very slowly coming to realize what European nations generally have recognized, that the education of youths leaving the elementary schools to work at the age of fourteen is insufficient. Many pupils leave before completing the sixth grade even. For those completing the elementary course, their education is inadequate in amount and kind to protect the employer from unintelligent workmen, the community from ignorance of the requirements of social welfare, or the state from an incompetent electorate.

We provide evening schools which are generally compulsory below the fourth grade, but voluntary in respect to attendance above that point. The half-time and short-time co-operative schools are the beginnings of provisions for education during some portion of the ordinary working hours. Among the half-time schools, Fitchburg, Freeport, Cincinnati, and Providence co-operative classes are departments of high schools.

Completion of the elementary course is required for admission and at least one year full-time in the high school is required before factory work can begin. Cincinnati requires two years. Therefore, these schools deal with a select group of pupils, at least sixteen years of age by the time factory work begins. Lewis Institute, a philanthropic school, charging tuition, has a co-operative half-time class. Pupils must be not less than sixteen years old to be eligible to attend. The Beverly half-time co-operative school receives boys fourteen years old that have completed the sixth grade in the public schools. None of the short-time co-operative schools at which attendance is voluntary receives pupils under sixteen years of age. In Cincinnati in September, 1911, attendance, four to eight hours a week, at a continuation school was made compulsory to sixteen years of age for employed youths over fourteen years of age if they left school before completing the elementary-school course. So far as I know, this is the only compulsory day continuation school now in operation in the United States. A report says, "These pupils are now being classified as to the vocation followed, and will receive expert industrial instruction on the completion of the classification."

SUBJECTS STUDIED

Although continuation schools were originally intended to continue the regular elementary-school subjects, they are now chiefly devoted to teaching the technical and theoretical subjects required in the trades practiced. The plan of devoting the co-operative school wholly to the acquisition of technical knowledge and trade efficiency was greatly encouraged by the example of the apprenticeship schools maintained by the large corporations, by the demands of manufacturers not maintaining their own schools, and by the desires of the pupils themselves who hoped to increase their wages by this study. The philanthropic trade schools have also for the most part limited themselves to satisfying the demands of the trade, and give no separate place on the program for the cultivation of personal, social, and civic obligations. A report of the machinists' continuation school at Cincinnati says, "The general culture work has been, perhaps, the most difficult to work out. The school authorities have felt that such work was absolutely essential, while the majority of the boys were inclined to the opinion that it was a waste of time. The problem that confronted the director was to give

the culture work in such a way that the practical value would be evident." Acquiescence in dropping the formal studies of the public schools has been more ready because many that left school to work were not book-minded. Retarded two or more years, they give up and go to work because the school tasks seem beyond their powers. Such pupils can be reached and benefited only by some new method of approach.

This suggests that a new application of the psychology of interest and motivation is required for our industrial schools. May not the love of creative work that enables youths to take so kindly to shop work serve to motivate the personal, social, and civic betterment subjects? May we not with profit change our requirements from memorizing books to right actions; from book civics to intelligent participation in civic life; from formal physiology to hygienic living; from economics to social service; from grammar and composition to shop records and business and social documents? We need less formality, but more concentration, effort, and self-control. Formal examination papers may give way to tests of correct action and correct attitude in the personal problems of daily living. May it not be possible, also, that the industrial school, affording the pupil abundant sense stimuli and experience in manipulating materials and machines in creative work, is a far more effective organism for promoting mental development, at least for certain types of mentality than the bookish courses of the ordinary schools? There are two great purposes in industrial education: first, to cultivate a finer industrial intelligence, a greater skill, and a higher productive efficiency as an industrial unit; second, to develop a finer social intelligence, a controlling moral purpose in action, and a consistent activity according to ability in civic affairs. Experience may prove what some of us already suspect, that these two purposes may be closely correlated. Making an honest living contains the elements of living an honest life. Industrial efficiency, functioning in the person, implies such fundamental virtues as diligence, responsibility, self-control, and co-operation. Industry and right relations with fellow-workmen are an excellent approach to right relations to the community and the state.

Finally, there is a culture resulting from doing and being more vital than the culture derived from books alone. Industrial education makes this vital culture possible in greater or less degree to a class of individuals for the most part hopelessly out of reach of the traditional streams of liberal education.

VII. THE CINCINNATI CONTINUATION SCHOOLS¹

PLINY JOHNSTON

Woodward High School, Cincinnati, Ohio.

A certain sanitarium gave a test for insanity which it always claimed was absolutely conclusive. It was very simple. The patient was given a large dipper and was set to emptying a tub of water set under a hydrant with the water turned on. If the patient continued trying to empty the tub without turning the water off he was declared to be hopelessly insane. We, as schoolmen, are undertaking a similar task in our battle against ignorance, as long as we allow a stream of ignorant children to leave our schools, simply because they are fourteen years old.

The continuation school has not stopped the flow. That is a subject for more aggressive action than has yet been undertaken; yet it seems to me that this sort of school has done more to retard the outgoing current than any movement yet inaugurated.

We have in Cincinnati four types of continuation schools, each as well suited to the type of pupils for whom they were devised as we have been able to make them. We probably have made many mistakes—many more than we would have made had we been able to profit from the mistakes of someone else.

MACHINE-SHOP CONTINUATION SCHOOL

This school was at first a private venture. Two large manufacturers employed a teacher for their men, a teacher not alone of the immediate and necessary principles of their work, but one able to give them also the technical outlook of the skilled machinist.

The apprentice class was the only class considered, and a few hours per week were set apart for the boys who wished to take the instruction.

¹ The author of this paper reports that he wrote to the school superintendents of the larger cities concerning the maintenance of continuation schools but failed to receive any accounts of work being done elsewhere. See A. J. Jones, "The Continuation School in the United States," *Bulletin of the U.S. Bureau of Education*, 1907, No. 1 (distributed gratis) for a discussion of the general problem.—EDITOR.

Encouraged by the results, more manufacturers entered the scheme. They realized that the business of giving an education is such a responsible one that an expert who has made it his life-work should have it in charge. Consequently they consulted the Board of Education and the work was put in charge of the Superintendent of Schools in September, 1909.

The school runs forty-eight weeks a year, eight hours a day, four and a half days a week, besides two half-days which are spent by the teachers in visiting the boys in the shop, seeing the conditions under which they work, consulting with the foremen about the needs of the boys, and getting ideas and material for their guidance in teaching.

The attendance averages about two hundred per week and about twenty-two to a class. The boys are paid their usual wages for attendance by the employers and are docked when absent or late.

A weekly report is made by the school to the employers in time for their pay-rolls. Two teachers are employed, both experienced shopmen and expert teachers. The cost of the school is about \$3,000 a year, or \$15 per boy. Twenty-one shops co-operate with the school.

The students are classified as closely as possible into four groups, according to their year of apprenticeship. The more immature come the early part of the week, and the advanced students the latter part of the week. The course is four years long, corresponding to the term of apprenticeship.

Course of study.—The course of study is as follows:

First year: Shop arithmetic, spelling, reading, composition, reading blueprints, drawing, geographical relations of shop materials and civics.

Second year: Objective geometry, science, iron, its manufacture and founding, blue prints, mechanical and technical drawing, shop practice, shop conventionalities and necessities, civics, and the reading of the lives of the world's improvers.

Third year: Geometry and algebra, physics, shop practice, foreman's question box, drawing, civics, and economic history and literature.

Fourth year: Trigonometry and applied mathematics, shop chemistry, shop practice, visiting of industrial plants, and discussing observations, especially of economy and waste, culture, the man as a wage-earner and citizen, debates.

All the work done in school is conducted as class study, the school not being equipped with machinery. The night school held in the

near-by large high school affords an opportunity for the boys to get a training in machinery.

The older men in the shop, who at first scoffed at the education of the apprentices, later made an appeal for some consideration for them. Accordingly, a night school, especially for them, was organized in the same building and by the same teachers, and the men are now studying four nights a week in order that the boys might not displace them. The fifth night the foremen attend school, and all unconsciously apprentices, mechanics, and foremen have learned what successful schoolmen have had burned into their souls, that there is no such thing as standing still, that they must advance, and that advance can only be made by hard study. At the end of the four years, if the work has been satisfactorily done, the boy receives a diploma, which stands for four years of toil scrutinized by foremen as well as teachers.

PRINTERS' CONTINUATION SCHOOL

An extension of this school has been made in the Printers' Continuation School, opened September, 1911. This differs, of course, somewhat from the original continuation school in its course of study, but far more in the manner in which it was suggested. This time it came from the workmen, the Allied Printing Trades Council and the Ben Franklin Club. This school meets one day per week, 7:30—11:30 A.M. and from 1:00—5:00 P.M. The boys are paid for attendance by their employers and forty-two have taken advantage of the instruction.

CONTINUATION SCHOOL FOR YOUNG WOMEN

The necessity of a continuation school for men is not as great as the necessity of a continuation school for women. No one who has ever engaged in any philanthropic work for girls in our large cities wonders why girls go to the bad; the wonder rather is how any of them ever remain clean. It is said that the New York shopgirl meets only one pure-minded woman in her whole city life, and that is her Sunday-school teacher. Since the Sunday-school teacher seems to be no longer a factor in the shopgirl's life, there is absolutely no influence, except accidental, that works for her good. Our girls now have one interest which they themselves have not created. Two hundred girls are now enrolled in salesmanship classes, in study of applied art and design, and of textiles and fabrics. As a part of this work there are twenty classes

where courses of home economics (nursing, sewing, and cooking) are given to young housewives. I would say of this course that it is the only one in all our public schools that is actually given at the time when it is most appropriate. The attendance on these classes is five hundred.

COMPULSORY CONTINUATION SCHOOLS

Last and most important of all in matter of numbers and influence is the compulsory continuation school.

Boards of education in Ohio are given permission to establish continuation schools for youths from fourteen to sixteen years of age, who are employed, and, after having established such a school, are given the right to compel attendance. The time required of the youth must not exceed eight hours per week. The Cincinnati board decided on four hours a week.

These pupils are divided into sixth, seventh, and eighth grades. As they are with us but one-half day per week their work must be of such a character that it will completely monopolize their time while in school, and cover as nearly as possible the leisure time outside. The four hours are divided into six periods, with a short recess.

Work for girls.—On the manual side the girls sew in the sixth, cook in the seventh, and make hats in the eighth grade. The girls of the sixth and eighth grades are given a period per day in industrial art of such a nature, for instance, as shirtwaist designs to supplement their work in sewing and hat designs for millinery. The girls are encouraged to note the fit of their own dresses, to bring garments from home which need remodeling, to finish garments cut out in school, to be able to tell long-wool cloth from shoddy, and finally to cultivate a taste, not for expensive, showy clothes, but for quiet clothes of honest worth. It may seem a trivial matter to direct the clothing of our young girls, but when we are told plainly that young girls are willing to barter their character for fine clothes and new hats the work does not seem out of place.

The scholastic side is not neglected, yet we cannot hope to cover the whole ground in arithmetic, grammar, geography, and history. We teach only the bare essentials in arithmetic, and there is certainly no great opportunity for close application in any branch. The usual lists of books were sent to these schools and the books were distributed, and very often the principal has been detected hiding such necessary books as algebra and formal grammar.

Work for boys.—Our boys are not set at the usual first work of manual training, namely, benchwork (not a particularly engaging work), but are immediately put in charge of a machine, a wood-turning lathe. The wheels go round and boys of the wilful sort cease thinking of themselves, because their attention is compelled by the machine they handle. By introducing the most active element first, their interest is at once secured and is thereafter easily directed to the quieter fields of manual training, such as mechanical drawing and pattern-work.

In the academic work the same principle of elimination and careful selection is followed as stated above in connection with the boys' courses. Every principle in arithmetic and grammar is on trial for its life, and many of the hoary haired have been thrown into the wastebasket.

Parents interested.—More attention is paid to the parents here than in any other school. On many an afternoon they come in "to see my boy or girl at work," and on many an afternoon they listen to the orchestra, the drama enacted by the pupils, the interesting talks, etc., which are given between 4:00 and 5:00 P.M., and then they return home with their sons and daughters, feeling that the world is growing better and that life is more worth while. Our unruly boys and girls (and there are a few that kind treatment and interesting work are not able to curb) simulate good behavior, because if they do not behave in school, their employer will be informed and they will be dropped.

Pupils' interest in the work an important factor.—The age of fourteen to sixteen inclusive is recognized as the rapid development of interest in self and life. There is need for care at this age in respect to the social life, and the reason that the high school in some of its phases is a most bitter disappointment is because of the lack of this social life. At this age the question of what the children learn is not as important as what they get by association, inference, and intuition. These young folks are put at automatic work in the shops. Their employers have learned by long experience that young persons, at this age, do not think—at least not about the interests of their employer or the care of his machinery. Thus they are set to work at machines where the only evidence of brains is found in the inventor. Day after day they do the same thing, the same way, and watch the clock till escaping time comes. Fatigue toxin has poisoned their bodies and their minds. The relief from that toxin is sought in amusement, and the amusement at hand is not of the right sort. Our course of study seeks, first of all, to interest the pupils in their work; and second, to give them something to think about during the

week. The girls are sewing and drawing and watching hat styles in the windows and on people. The boys go to the public library and read up to be ready for the other fellow in debate.

The employers insisted that we should teach the essentials, and these, in their opinion, were arithmetic and spelling. But when we attempted to teach the good old standard studies in the same old way, we were met with sullen, unresponsive silence. The reason was not hard to find. The principal questioned a class, thirty boys in all, as to why they had stopped school at the end of the fifth grade. Four boys stopped because their parents actually needed them, and twenty-six stopped because they were tired of school. What would you think of the continuation school that had so little pliability as to teach these sullen boys the same way in which the hated school they had just escaped from had done? Need we give any other reason to show why the old-time methods will not do in the continuation school?

Girls and boys go to the bad between the ages of fourteen to sixteen. Of course it may occur after that period, but unrestrained, unbridled youth, at this period, lays the foundation for a life of bitterness. The ideal school would keep children from fourteen to sixteen in school all the time, but since we have not, as yet, ideal laws, we must not let them run unrestrained after fourteen. The employer is too busy, but between the supervisor of the continuation school and the employer there is much useful supervision bestowed upon the youth.

The continuation school for older persons is a comparatively simple problem. These men and women have their fairly fixed habits, and it is not so much the individual that must be taken into account, but his life-work. That is, his trade is his concern and ours too. But in the compulsory continuation school we have the young animal to deal with, and the choice of the young animal's trade. He is vagrant both in body and mind. I will give you a type—not the worst by any means, but a boy taken at random. Here is his record, as taken from the Labor Certificate Office:

K828, WHITTIER SCHOOL, 7TH GRADE, AGE 15

Oct.	17, 1910	Ohio Messenger Co.....	\$5.00
Nov.	12, 1910	Robt. Clark Errand Boy.....	5.00
Dec.	3, 1910	Cincinnati Hat Frame Co.....	
Mar.	3, 1911	Victor Lamp Co.....	4.50
Apr.	10, 1911	Wm. Newmark Co.....	
May	15, 1911	Rubel Bros.....	4.00
June	15, 1911	Krippendorf, Dittman Co.....	

VIII. VOCATIONAL GUIDANCE

MEYER BLOOMFIELD

Director of the Vocation Bureau of Boston

When the Civic Service House, a social settlement in the crowded North End of Boston, invited the late Professor Frank Parsons, in October, 1908, to undertake a work of personally advising with the young men and women who attended its clubs and classes it soon found an outside call for such service to a degree which taxed the strength of the adviser and the resources of the institution.

So thoroughly did Professor Parsons conceive and outline his work, so detailed and even scientific were his methods of consultation, that before very long there literally came to him a country-wide demand for information and personal help. He was spared only long enough to write his *Choosing a Vocation*, the first modern work on this subject.

After his death, one of Boston's leading merchants and a number of public-spirited men and women decided to organize the work of vocational advising on a scale adequate to the demands which kept increasing. Mrs. Pauline Agassiz Shaw, the founder of the Civic Service House, and the writer, who for ten years had been its director, co-operated in this effort. Later the writer secured a leave of absence from settlement duties in order to direct the development of the new Vocation Bureau.

On May 4, 1909, Mr. Edward A. Filene, as one of the moving spirits of the civic movement known as Boston 1915, received the following letter from the secretary of the Boston School Board:

DEAR SIR: I respectfully call your attention to the following order which was passed by the School Committee at a meeting held yesterday evening.

"Ordered, that the Boston-1915 Committee be requested to secure the co-operation of the Vocation Bureau for the purpose of assisting graduates of the public schools of this city in choosing wisely the most appropriate employment, etc."

On May 12, after a conference in the Boston-1915 office, the Executive Committee of the Vocation Bureau sent the following statement of its plan of co-operation to the School Board:

FIRST. The Vocation Bureau will employ a Vocational Director to give practically his entire time to the organization of vocational counsel for the graduates of the Boston Public Schools during the ensuing year.

SECOND. The work of this Vocational Director shall be carried on in co-operation with the Boston School Committee or the Superintendent of Schools, as the committee shall see fit;

THIRD. It is the plan of the Bureau to have this Vocational Director organize a conference of the masters and teachers of the Boston High Schools through the School Committee or through the Superintendent of Schools for the purpose of providing that members of the graduating classes will be met for vocational advice either by this Vocational Director or by the co-operating schoolmasters and teachers, all working along a general plan to be adopted by this conference.

FOURTH. This Vocational Director should, in co-operation with the Superintendent of Schools or any person whom he may appoint, arrange vocational trips and vocational lectures for the members of the graduating classes.

FIFTH. The Bureau believes that schoolmasters and teachers should be definitely trained to give vocational counsel, and therefore that it is advisable for this Vocational Director, in co-operation with the Superintendent of Schools, to establish a series of conferences to which certain selected teachers and masters in the schools shall be invited on condition that they will agree in turn definitely to do vocational counseling with their own pupils.

On Monday, June 7, the Boston School Committee having adopted the vocational guidance plans submitted, instructed the superintendent to appoint a school committee of three masters and three sub-masters to meet regularly with the director of the Vocation Bureau. This committee has been holding weekly meetings at the office of the Bureau, and its report after a year of service deserves quoting. Among its more important statements and recommendations are the following:

The Committee on Vocational Direction respectfully presents the following as a report for the school year just closed. The past year has been a year of beginnings, the field of operation being large and the problems complicated. A brief survey of the work shows the following results:

A general interest in vocational direction has been aroused among the teachers of Boston, not only in the elementary but in the high schools.

A vocational counselor, or a committee of such counselors, has been appointed in every high school and in all but one of the elementary schools.

A vocational record card of every elementary-school graduate for this year has been made, to be forwarded to the high school in the fall.

Stimulating vocational lectures have been given to thirty of the graduating

classes of the elementary schools of Boston, including all the schools in the more congested parts of the city.

Much has been done by way of experiment by the members of this committee in the various departments of getting employment, counseling, and following up the pupils after leaving school.

The interest and loyal co-operation of many of the leading philanthropic societies of Boston have been secured, as well as that of many prominent in the business and professional life of the city and the state.

A good beginning has already been made in reviewing books suitable for vocational libraries in schools.

It was early decided that we should confine our efforts for the first year mainly to pupils of the highest elementary grade as the best point of contact. The problem of vocational aid and counsel in the high schools has not as yet been directly dealt with, yet much that is valuable has been accomplished in all our high schools on the initiative of the head-masters and selected teachers. It is safe to say that the quality and amount of vocational aid and direction has far exceeded any hitherto given in those schools. The committee, through open and private conferences, and correspondence with the head-masters, have kept in close touch with the situation in high schools, but they feel that for the present year it is best for the various types of high schools each to work out its own plan of vocational direction. The facts regarding their experience can properly be made the basis of a later report. A committee of three, appointed by the Head-masters' Association, stands ready to advise with this committee on all matters relating to high-school vocational interests. Once during the year the principals of the specialized high schools met in conference the vocational counselors of the city and have presented the aims and the curricula of the schools in such a way as to greatly enlighten those responsible for advising pupils just entering high schools.

The committee have held regular weekly meetings through the school year since September. At these meetings every phase of vocational aid has been discussed, together with its adaptability to our present educational system. Our aim has been to test the various conclusions before recommending them for adoption. This has taken time. Our most serious problem so far has been to adapt our plans to conditions as we find them, without increasing the teachers' work and without greatly increased expense. We have assumed that the movement was not a temporary "fad," but that it had a permanent value, and was therefore worthy the serious attention of educators.

Three aims have stood out above all others: first, to secure thoughtful consideration, on the part of parents, pupils, and teachers, of the importance of a life-career motive; second, to assist in every way possible in placing pupils in some remunerative work on leaving school; and third, to keep in touch with and help them thereafter, suggesting means of improvement and watching

the advancement of those who need such aid. The first aim has been in some measure achieved throughout the city. The other two have thus far been worked out only by the individual members of the committee. As a result we are very firmly of the opinion that until some central bureau of information for pupils regarding trade and mercantile opportunities is established, and some effective system of sympathetically following up pupils for a longer or a shorter period after leaving school is organized in our schools as centers, the effort to advise and direct merely will largely fail. Both will require added executive labor which will fall upon the teachers first. We believe they will accept the responsibility. If, as Dr. Eliot says, teachers will find those schools more interesting where the life-career motive is present, then the sooner that motive is discovered in the majority of pupils the more easily will the day's work be done and the product correspondingly improved.

In order to enlist the interest and co-operation of the teachers of Boston, three mass meetings—one in October and two in the early spring—were held. A fourth meeting with the head-masters of high schools was also held with the same object. As a most gratifying result the general attitude is most sympathetic and the enthusiasm marked. The vocation counselors in high and elementary schools form a working organization of over one hundred teachers, representing all the schools. A responsible official, or committee, in each school stands ready to advise pupils and parents at times when they most need advice and are asking for it. They suggest whatever helps may be available in further educational preparation. They are ready to fit themselves professionally to do this work more intelligently and discriminatingly, not only by meeting together for mutual counsel and exchange of experience but by study and expert preparation if need be.

As a beginning of our work with pupils we have followed out two lines: the lecture and the card record. The addresses have been mainly stimulating and inspirational. It seems to the committee, however, that specific information coming from those intimately connected with certain lines of labor should have a place also in this lecture phase of our work. In a large number of high and elementary schools addresses of this character have been given by experts during the year. The committee claim no credit for these, though carried out under the inspiration of the movement the committee represent. The custom of having such addresses given before Junior Alumni Associations, Parents' Associations, and evening school gatherings has become widespread, the various masters taking the initiative in such cases. The speakers are able to quote facts with an authority that is convincing to the pupil and leads him to take a more serious view of his future plans, especially if the address is followed up by similar talks from the class teacher, emphasizing the points of the speaker. This is a valuable feature and should be extended to include more

of the elementary grades, especially in the more densely settled portions of the city, from which most of our unskilled workers come.

A vocational record card, calling for elementary-school data on one side and for high-school data on the other, has been furnished all the elementary schools for registration of this year's graduates. The same card will be furnished to high schools this fall. These cards are to be sent forward by the elementary-school counselors to high schools in September, to be revised twice during the high-school course. The value of the card record is not so much in the registering of certain data as in the results of the process of getting these. The effect upon the mental attitude of pupil, teacher, and parent is excellent, and makes an admirable beginning in the plan of vocational direction.

The committee are now in a position where they must meet a demand of both pupils and teachers for vocational enlightenment. Pupils should have detailed information in the form of inexpensive handbooks regarding the various callings and how to get into them, wages, permanence of employment, chance of promotion, etc. Teachers must have a broader outlook upon industrial opportunities for boys and girls. Even those teachers who know their pupils will generally have little acquaintance with industrial conditions. The majority can advise fairly well how to prepare for a profession, while few can tell a boy how to get into a trade or what the opportunities therein are. In this respect our teachers will need to be more broadly informed regarding social, industrial, and economic problems. We have to face a more serious problem in a crowded American city than in a country where children are supposed to follow the father's trade.

In meeting the two most pressing needs, viz., the vocational enlightenment of teachers, parents, and pupils, and the training of vocational counselors, we shall continue to look for aid to the Vocation Bureau. The Bureau has been of much assistance during the past year, in fact indispensable, in matters of correspondence, securing information, getting out printed matter, and in giving the committee counsel based upon a superior knowledge of men and conditions in the business world.

The question of vocational direction is merely one phase of the greater question of vocational education. As a contributory influence we believe serious aggressive work in this line will lead to several definite results, aside from the direct benefit to the pupils. It will create a demand for better literature on the subject of vocations. It will help increase the demand for more and better trade schools. It will cause teachers to seek to broaden their knowledge of opportunities for mechanical and mercantile training. Lastly, it will tend to a more intelligent and generous treatment of employees by business houses, the personal welfare and prospects of the employee being taken into account as well as the interests of the house itself.

What has given rise to the nation-wide interest in the subject of vocational guidance? Advising with young people as to their future is not a new thing. The teacher has long been the child's counselor. Parents have always felt the deepest concern in this vital matter. What is the reason for a separate and specialized organization's undertaking a service so intimate and personal? Reflection must convince one that personal and individual effort, however invaluable, cannot deal adequately with modern conditions. Tenement homes, a large immigrant population as yet unacquainted with the possibilities of the new country, large school classes, and complex conditions of commerce and industry give rise to a situation which, besides friendly sentiment, needs facts, organization, and even science to understand and cope with.

We are living in the midst of a restless period, impatient with crudeness, and too preoccupied to pause over the stumblings and gropings of its bewildered youth. Into this arena of tense effort, the schools of our country send out their annual thousands. We somehow trust that the tide of opportunity may carry them to some vocational destination. Only the relatively few who reach the higher training institutions can be said to have their problems at least temporarily solved during the critical period of adolescence. A multitude are sent out to cope with the new conditions of self-support. Whose business is it to follow up the results of this transition from school to work? Whose business is it to audit our social accounts and discover how far our costly enterprises in education, the pain, the thought, the skill, and the sacrifice we put forth with the growing generation are well or ill invested in the field of occupation? The higher training schools are as profoundly concerned in this problem as are the elementary schools. The well-to-do are no less affected than the poor. Until society faces the question of the life careers of its youth, the present vocational anarchy will continue to beset the young work-seekers.

It is clear that we have slighted that part of a youth's life which marks the serious and critical transition from school to work, from the shelter of social care to the liberties and responsibilities of wage-earning. And we naturally expect therefore certain definite consequences of this neglect.

To some extent there is a reason for the meagerness of attention to this matter. Educational policies have not been so perfected as to afford those concerned with them the freedom and the leisure to regard much else, however pressing. Indeed it is fair to say that many a strong

word has come from the friends of school children who have been realizing the pitiful futility of spending all we do for our children with the certain prospect of nullifying for many whatever benefits have been gained during school life.

To the public as a whole, and not to any group of people, does the responsibility for making good the child's investment of its training lie. Vocational guidance presents itself as a community problem.

An important step in this direction was the organization in Boston of the Vocation Bureau, the first of the kind in the country. The men and women behind it, leaders in commerce, industry, education, and social service, appreciated keenly the present misdirection and waste in the critical transition from school to work. They saw that choice of a vocation is impossible to young people ignorant of the conditions of success and efficiency in the modern working world, and understood that neither school life nor working life could serve to best advantage unless training, information, and purpose were brought to those in need of them. Thousands of children leave school for work, not to follow a calling, but to get a job. Unguided, unprepared, and uninformed they find themselves in a condition of vocational anarchy. The social loss of all this, as discovered by reports, statistics, and observable consequences, is appalling. Our children are "pitch-forked into the working world," as Charles Booth has said. To lessen this social waste, to furnish necessary information about various occupations and their advantages and disadvantages and the training necessary for efficiency in them, to broaden the range of choice, and to deepen the "life-career motive" in education and in employment, the Vocation Bureau was organized. The main interest of the Bureau is not the employment of youth, however favorable and pleasurable the opportunity, but its best social investment. Underlying all its endeavors is the realization that a longer period in school and continued training are fundamental to achievement in every desirable occupation.

In accordance with this plan 117 teachers were appointed to serve as vocational counselors, and the opportunities open to boys and girls were fully discussed in a course of lectures and discussions conducted by the vocational director. Among the subjects presented were:

The Principles of Vocational Guidance.

The Shoe Industry.

The Boy and Girl in the Department Store.

The Sources and Methods of Vocational Guidance.

The Machine Industry.

A Group of Trades for Boys.

The Telephone Industry for Girls.

Stenography and Typewriting for Girls.

Bookbinding for Girls.

Architecture.

The Use of Statistics.

To supplement these discussions the Bureau has made a study of some forty or fifty Boston occupations, and a series of bulletins has been issued to the school counselors including among other titles:

The Machinist.

Banking.

The Baker.

Confectionery Manufacture.

The Architect.

The Landscape Architect.

The Grocer.

The Department Store.

This year's series of talks to school counselors will include:

For Boys:

The Machine Trades.

Agriculture.

Mechanical and Civil Engineering.

Electrical Engineering.

Textile Mill Working.

The Building Trades.

The Selling Clerk.

For Girls:

The Needle Trades.

Opportunities in the Department Store.

Conditions in Industry for the Young Girl Wage-Earner 14-16 Years Old.

Vocational Opportunities for the Girl Who Completes the High School.

The results of this work have been extremely important and the usefulness of vocational guidance has become definitely established. Fundamentally, vocational guidance aims to fit the boy and girl for their work and, what is equally important, to make their work fit for the boy and the girl. School life and working life are asked to co-operate in making the most of youth's possibilities. This is a service in behalf of efficient democracy; for work and school must join hands in fitting the future citizen for the highest and best achievements.

IX. INDUSTRIAL EDUCATION IN THE NORTHWEST

BEN W. JOHNSON

Supervisor of Industrial Education, Seattle, Wash.

The Northwest, particularly the state of Washington, is making some progress along the lines of industrial education and vocational training in the elementary and intermediate field of education. The meaning of the terms industrial education and vocational training is that used by Dr. David Snedden, commissioner of education of the state of Massachusetts.

The description of the schools established this fall in Seattle will further illustrate the writer's understanding of these much-abused terms.

The history of the movement here parallels that of a number of eastern states, notably Ohio. Manual training began its leavening influence in the school curriculum eighteen years ago in the Seattle High School. Since that time it has made itself an important department of the city's school system, requiring over fifty teachers for its instruction in all grades of the school. Tacoma and Spokane followed soon after Seattle, and have had a proportionate growth. Today there is scarcely any town over 4,000 which does not have some form of manual training in its school work, while many rural communities are making a beginning in elementary handwork and agriculture.

Like the best progress of the East the subject manual training has itself been greatly modified in method and content and an effort has been made to use the industries of the community as the basis of this work.

Such is the case in the great fruit-raising sections of the state. An example of this is at Wenatchee, where agriculture is being taught very successfully, with the emphasis upon horticulture and the present and future needs of that great fruit-growing country.

A similar example is that at Waterville. Led by a very able and public-spirited citizen, Hon. A. L. Rogers, the people are laying the foundation for what may be a very remarkable country school, in which

the boys from the entire countryside are to be taught such industrial branches as will fit them for the highest efficiency in practical farming.

At Snohomish the school board has recently acquired a considerable tract of land for practical agriculture. It also has iron- and wood-working shops in connection with this high school. The work in the latter, however, is based upon the educational rather than vocational point of view.

On the Pacific slope of this state, the region of the great fir and cedar forests, woodwork and the vocations dependent upon the production, manufacture, and distribution of this all-important product predominate. For the boy, at least, the forms of manual training using wood are fundamental. For the girl, the home-makers' arts everywhere universal and fundamental to womankind are the basis of her manual training. The vocational impulse, however, affects these subjects for the girl only so far as they equip her better for the actual work and responsibilities of the home.

The writer is not aware of any vocational or industrial education in this section that seeks to equip the girl better for earning a living in definite lines of women's work, other than those few, such as dress-making or millinery, that may be developed from her work in the home-making course of the regular school work.

The seeming lack of schools for vocational and industrial education is not so much due to any failure on the part of those responsible for the promotion of the educational plans in either state, county, or city districts but rather to a failure on the part of the people as a whole, who do not yet feel any serious need for vocational education. The reason for this is that the state is new and the development of the raw material of the state is but scarcely begun. Lumbering and fishing predominate in the western section while wheat-growing and fruit-raising predominate in the eastern section.

Manufacturing has scarcely begun with us, consequently the commercial pursuits predominate in the cities and towns. That we are destined to become a great manufacturing section is evidenced by the abundance of raw material available, and also from the marketable water-power available in the Cascade and Coast ranges of mountains.

Further evidence of this attitude was shown in the last session of the state legislature when a bill for the appointment of a state commission on industrial education was defeated, because the legislature was

averse to appropriating any money for this purpose and because it thought the state Department of Public Instruction able to carry on any investigation as to the industrial and vocational conditions, both in the schools and the industries of the state.

However, realizing that a beginning should be made and that there is no pressing demand for a trade school, Seattle, the largest city in the state, has this fall opened up three so-called industrial centers to accommodate the pupils of the intermediate period—the seventh and eighth grades and the first and second years of the high school.

Preliminary to carrying out this plan the usual manual-training course for the boys of the sixth, seventh, and eighth grades was the year previous enlarged in its aim, content, and method from the usual educational manual training of giving the boys sequential problems in construction, in the solution of which the boys would gain something of skill in tools and processes, some knowledge of the materials used, and some appreciation of the constructive life about them. This enlargement consisted in making an industrial or vocational approach to the manual arts—using them to illustrate as actually as possible the industries and vocations that are dependent upon these arts.

While the limitations imposed by the regular school program prevented very much change in the actual work done by the boys, it was possible to give it a larger significance as a study of those vocations using similar materials and processes.

For example, in the sixth grades the aim is to emphasize the four important facts the worker in wood has to know to be successful in his vocation: (1) his tools and how to use them; (2) what woods and materials are suitable to use and why; (3) how to form and put them together; (4) what is wanted and how to supply it.

In the seventh grade this approach emphasizes the same idea, but from another standpoint. Here the different kinds of workers in wood are brought out. The differentiation due to the service each renders society by reason of the special skill and knowledge he possesses is emphasized. The following four points are kept before the class: (1) a need to be supplied; (2) what materials are required; (3) what form or construction is best and necessary; (4) what tools, machines, and processes are required.

In this way the class considers and makes some problem illustrative of the furniture-maker, the ship-builder or carpenter, the bridge-builder,

etc. In the eighth grade the application of power in the service of these different vocations is taken up in a limited way in much the same manner.

No originality is claimed for this plan. It was suggested by similar efforts in other cities.

It is reasonably successful in the hands of a skilful and well-trained manual-training teacher. It is to be regretted we do not have more such teachers. The very limited time granted this subject in our schools ($1\frac{1}{2}$ hours per week) is a serious obstacle in carrying out this idea successfully.

The industrial classes or centers opened this fall are best described by the circular which was sent home by the prospective pupil in order that his parents might understand fully the purpose of such a class:

SEATTLE PUBLIC SCHOOLS

THE ELEMENTARY INDUSTRIAL SCHOOL

The Board of School Directors of the Seattle public schools have authorized the opening of three industrial schoolrooms or centers.

The purpose of this circular is to explain the aims, plan, and program of such a school; the requirements for admission; its relation to the high school; and some of the reasons which have lead to its establishment.

The Elementary Industrial School is intended to provide a course of study relating much more to the industries than the ordinary school program, and containing a more practical training for a class of boys and girls in the public schools who will be better suited by instruction which will the better and sooner prepare them for training in a definite vocation. In every school there are some boys and girls who prefer studies and exercises that employ their hands and who have greater aptitude in such studies than their fellows. They advance in their development by what they do rather than by what they hear. They are practical-minded. Many such children drop out of school as soon as the law permits, not from lack of ability, but because the school fails to fit its procedure to their particular needs. The establishment of these industrial classes is an attempt to fit the school to the wants of this class of pupils. Such classes are not substitutes for a trade school, but are intended to lead more quickly and surely to apprenticeship in business or trade, while not closing the door to further study either in high or special schools if the pupil desires to pursue such a course.

The plan provides distinct courses for boys and for girls and requires the separation of those taking it from the regular school classes in the building where it is maintained, because of the difference between the courses.

The school day, which is the same as for the regular classes, will be divided

into seven periods of forty minutes each, about half of the time to be spent upon the ordinary school studies, modified to suit the end aimed at in this plan, and the other half to be devoted to the industrial and household arts—shopwork and mechanical drawing for the boys, and cookery, sewing, design, and drawing for the girls.

OUTLINE AND EXPLANATION OF INDUSTRIAL COURSES

For Boys	For girls
English	English
Geography—History	Geography—History
Arithmetic	Arithmetic
Mechanical drawing	Drawing and design
Shopwork	Sewing
	Cookery

English will include reading, spelling, penmanship, letter-writing, and composition.

Geography will include map studies, climatic conditions and influences, industries and products, exports and imports, routes and centers of trade, the studies to be correlated as far as practicable with the work in shop and kitchen.

In history there will be a review of the influential events in the development of our country, including particular reference to the country's greatest characters and their achievements, and of the causes contributing to our present national standing. The purpose will be to give an elementary knowledge of the important facts in our history and to imbue with a patriotic desire to be serviceable.

In arithmetic the fundamental operations include fractions applied in shopwork and in local problems; percentage and interest; applications of measurements and mensuration. The purpose will be to secure accuracy in the use of figures and practice in their application to practical affairs.

Industrial.—The shop instruction will consist of work intended to give knowledge of materials and their sources and use; tools and skill in their use; methods of construction; problems in machine- and hand-work; acquaintance with factory and individual production; the use of preservatives, as paints, oils, etc.; discussions of the various vocations; visits to work under construction, to manufacturing and commercial establishments.

The industrial work for girls will consist of:

Plain sewing, garment cutting and fitting, repairing, household linens, fabrics used in the home, sewing machine, class talks and discussions regarding clothing, hygiene, style, costs, methods of manufacture, the sweatshop, trades and vocations for women.

Plain cooking, properties of foods, economy, table service, sanitation, laundry work, care of the home, etc. Actual conditions are possible for

purchasing and preparing a simple lunch daily and serving same to other pupils at noon at cost. Class talks upon related topics of home life and its obligations, domestic service, income and expenditure, etc.

Applied design in surface decoration as affected by material and service, the use of color, problems in making designs for notebook covers, belts, pillows, draperies, etc. The aesthetics of the home.

THE RELATION OF THIS COURSE TO THE HIGH SCHOOL

The rank of this course will correspond to the seventh and eighth grades of the usual school course, and will require two years for its completion. At the end of the two years pupils completing this course, who choose to continue their school work, may enter the high school upon an equal footing with the pupils entered from the regular course.

REQUIREMENTS FOR ADMISSION

This course is open to any boy or girl thirteen years of age or over, who has completed the equivalent of the present sixth grade, provided, the parent or guardian makes a written request upon the form provided for that purpose, and further that the principal of the school last attended by the pupil recommends that the pupil should take the industrial course.

As only three schools can be established at this time, the number of pupils will have to be limited to 72 boys and 72 girls. Do you wish to have —— attend one of these schools? If so, please sign your name below as indicative of your desire to have —— chosen.

These classes or centers are similar to the prevocational classes of Indianapolis and the industrial school of Cleveland, Ohio. They differ in their organization and somewhat in the character of the pupil encouraged to enrol in these classes. Each class requires three teachers. The classroom teacher, a woman, has the boys while the girls are with the special teacher in cooking and sewing, and the girls when the boys are with the special teacher (a man) in benchwork and mechanical drawing. She is thus able to center the academic work about the respective instruction of both boys and girls. The plan uses the usual manual-training equipment of the building and the class occupies one of the regular schoolrooms.

In this respect there is no isolation or separation from the social spirit of the schools. Class distinctions are avoided. The significance of this plan of establishing such classes in any school building where conditions warrant it is illustrated by the following quotation from a letter to the writer written by Mr. W. E. Roberts, supervisor of manual training, of Cleveland, Ohio.

We have another Elementary Industrial School in operation, differing from the first in that it is a part of a regular elementary school. There are about one hundred and forty advanced sixth-, seventh- and eighth-grade children in this department. My earlier experiences made it possible to start this work without a hitch, and it has moved forward smoothly from the very beginning. I am more and more convinced that the very great problem stirred up by Industrial Education, so called, is not as much an industrial problem as a problem of remodeling our elementary-school work. The new movement is going to accomplish what should have been accomplished by the manual-training movement.

In the selection of the pupils the judgment of the principal and teachers was relied upon to recommend those boys and girls who would profit the most by such a course.

This has been done so that the pupils in these centers are of an average in capacity compared to any other group. These classes have been in operation about six weeks and sufficient time has not elapsed to determine any definite results. The expression of both pupils and teachers signifies that the purpose for which these classes were established is being met.

The aim of the course is industrial cultural education by the industries rather than education for the industries.

This last will undoubtedly come later when the age is reached that is best for learning a definite vocation. The success thus far assures us that the educational needs of a considerable number of pupils who grow by what they do, motor-minded, is for the first time being adequately met.

A word only can be said regarding the evening-school work. There is a large and enthusiastic attendance in the cities of Spokane, Tacoma, Everett, and Seattle, particularly in those classes in the commercial and industrial lines, such as bookkeeping, typewriting, mechanical and architectural drawing, machine shop, foundry, forging, and benchwork for the men, and dressmaking, sewing, millinery, household science for the women. As evidence of the interest and practicality of the courses, the total enrolment in Seattle night high schools this year is 2,163, with 35 per cent in the industrial courses.

The Y.M.C.A. in the three leading cities, Seattle, Tacoma, and Spokane, have more or less equipment for industrial education and are meeting a certain need among the workers in the various industries, such as the building and machine trades. This work is done at night. The

Seattle association has excellently equipped shops for the machine- and wood-working trades, and has been carrying on for the past two years a co-operative half-time apprentice course, in day classes. Sixteen boys from three machine shops are now enrolled in this course. They are also successfully given day instruction in gas-engine construction and operation, and there is also a class in surveying for vocational preparation for the subordinate positions.

All of this work is, of course, under private auspices and subject to the usual tuition of Y.M.C.A. work.

The foregoing statements as to what is actually being done in this Northwest in industrial education is at best incomplete. Sufficient has, however, been said to indicate that this section of the country is awake to the needs of this field of educational effort.

THE ELEVENTH YEARBOOK

OF THE

NATIONAL SOCIETY FOR THE STUDY OF EDUCATION

PART II

AGRICULTURAL EDUCATION IN SECONDARY SCHOOLS

BY

A. C. MONAHAN, R. W. STIMSON, D. J. CROSBY, W. H. FRENCH, H. F. BUTTON,
F. R. CRANE, W. R. HART, G. F. WARREN

Edited by S. CHESTER PARKER, Secretary

THIS YEARBOOK WILL BE DISCUSSED AT THE ST. LOUIS MEETING OF THE
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PREFACE

This yearbook is planned to include accounts of what is actually being done in secondary agricultural education in various parts of the United States. The program represents an analysis of the typical experiments that are being undertaken, with some interpretation of each plan and its results. The contributors of the articles are specialists who are in intimate touch with the special phases of the work which they describe. To these men the National Society is indebted for their assistance and co-operation. The editor desires to express his special appreciation of the assistance of Mr. D. J. Crosby, of the United States Department of Agriculture, who organized the program and upon the urgent invitation of the editor agreed to prepare the third paper of the volume.



I. TRAINING OF TEACHERS FOR SECONDARY COURSES IN AGRICULTURE

A. C. MONAHAN

Specialist in Agricultural Education, U.S. Bureau of Education

Some idea of the present demand for instructors qualified to teach agriculture in secondary schools may be derived from the fact that in the United States at present there are over a hundred special agricultural schools located in 17 different states supported in whole or in part by the states, and that agriculture was taught in 1910, as a separate subject in more or less complete courses, to over 37,000 pupils in 1,800 public and 140 private high schools, according to the reports submitted by these schools to the Bureau of Education. It is true that much of the instruction given in these schools is very elementary and is of an informational rather than a practical character. It is true also that the courses given are very brief in the majority of cases. On the other hand there are fully as many high schools giving four-year courses as there are special agricultural schools and the courses given by them are as vocational in their character as the courses given by the majority of the special schools. California, for instance, has 12 high schools with agricultural departments in charge of special agricultural teachers. All of these schools are supplied with land for instructional purposes varying from 3 to 27 acres in extent; all have available laboratories and several have greenhouses. Michigan has 11 high schools with four-year courses in agriculture, each taught by a graduate of the Michigan Agricultural College. Massachusetts, New York, Nebraska, Iowa, Ohio, Minnesota, Tennessee, and Vermont each has several such schools. One or more may be found in almost every state in the Union.

Of the special agricultural schools and the 2,000 public and private high schools teaching agriculture, only a very few besides the institutions giving four-year courses in the subject have instructors with a college or normal-school training in scientific agriculture, and a large percentage of the active teachers with such training have had no training in psychology or pedagogy. Probably no one factor has had greater influence in retarding the introduction of substantial courses in agriculture in all

high schools whose pupils are drawn in large numbers from farming districts than the shortage of properly qualified teachers. The demand for such teachers is indicated by the numerous inquiries received by the Bureau of Education for information concerning where men may be found qualified to teach agriculture in elementary and secondary schools. President B. I. Wheeler, of the University of California, in a recent letter to the Bureau, writes: "The demand for male teachers in the elementary schools of California is unprecedented. There has come at one and the same time a general desire for well-equipped teachers of science and the additional demand for men particularly equipped in agriculture." President J. A. Widtsoe, of the Agricultural College of Utah, says: "Up to the present a large majority of the graduates of this institution have gone out as teachers of agriculture, home economics, mechanic arts, and related subjects." President J. H. Worst, of North Dakota College of Agriculture, writes: "The demand for such teachers is far and away beyond our ability to supply. This, for the reason that the high schools generally of Minnesota and many in North Dakota are incorporating fairly strong courses in agriculture in the high schools."

It will be several years before the supply of men available as instructors in agriculture will be sufficient to fill the demand. Although the salaries paid are from 50 to 100 per cent higher than paid for instructors in other subjects in secondary schools, the state colleges of agriculture are finding difficulty in persuading men to qualify specially for teaching, because even these salaries are not equal to those paid in the agricultural industries to the graduates of these institutions. It is important, however, that properly trained men be obtained. Agriculture as a high-school science has not yet been developed into good pedagogical form and until such development has taken place a higher grade teacher is needed for the agricultural subjects than for any other subject in the high-school curriculum.

Men for this work need a liberal education in the general cultural subjects, and special training: first, in the physical and natural sciences, particularly in their relation to the science and art of agriculture; second, in technical and practical agriculture and farm practice; third, in rural sociology and agricultural economics; fourth, in general psychology and pedagogy; fifth, in special agricultural pedagogy including the history of agricultural and industrial education, the place and purpose of agriculture in the high school, the function of the agricultural high school,

special methods of teaching agriculture, and other similar aspects of agricultural teaching. The opportunity for such preparation is offered by several of the state colleges of agriculture; the opportunity for a part of such preparation is offered by a large number of these institutions.

There is in each state and territory one college of agriculture and mechanic arts, established under the provisions of the act of Congress of July 2, 1862, commonly known as the Land Grant Act, because by it there was granted to each state a quantity of public land equal to 30,000 acres for each senator and representative in Congress, the moneys derived from the sale of which have formed perpetual endowment funds, the income being used for the support of these institutions. Further aid was provided them by the acts of Congress of August 30, 1890, and March 4, 1907, so that now each state receives from the federal government, not including the income from the act of 1862, an annual appropriation of \$50,000 exclusive of the money paid for agricultural experiment stations. In 17 southern states separate institutions for Negroes have been established and the federal appropriation is divided between the colleges for white students and these institutions.

While the agricultural work of these colleges, until the year 1907, was along technical lines almost exclusively, many of their graduates have become special teachers of agriculture in secondary schools with no other training than their technical agricultural courses and the other subjects in their general college course. More recently has come the demand for men trained specially for teaching, and it was largely in response to this demand that Congress in 1907, in the act for the benefit of state colleges of agriculture and mechanic arts, included the proviso that part of the money "may be used for the special preparation of instructors of the elements of agriculture." This measure is known as the Nelson amendment, as it is contained in an amendment to the appropriation bill for the Department of Agriculture. Under its provisions each state is now receiving for the benefit of its college of agriculture and mechanic arts the sum of \$25,000, included in the \$50,000 mentioned above, all or part of which may be used for the special preparation of teachers of the elements of agriculture. It is held by the Bureau of Education, in whose hands the administration of the federal funds for these institutions is placed, that this language authorizes the expenditure of these funds for providing special courses in agricultural pedagogy but not in general pedagogy.

As a result of the measure 36 of the 50 agricultural colleges, not including the separate institutions for the colored race, now offer some opportunities to their students to fit themselves as special teachers of agriculture for secondary-school work. Twelve institutions offer only certain courses in general education elective to students in agriculture, 14 offer courses in general education and special courses in agricultural education, 1 offers courses in agricultural education only, 7 that have departments of education allow students in these departments to elect courses in agriculture, 9 offer prescribed four-year courses for teachers, and 3 offer special one-year courses to persons preparing to teach agriculture who have already had the equivalent of the general college education. Several others will accept properly qualified persons as special students. The accompanying table gives a list of the state agricultural colleges that are offering special opportunities for preparing teachers of secondary-school agriculture and indicates which plan is followed by each institution.

A description of the special features of the pedagogical training for teachers of agriculture in all of the land-grant colleges cannot be given here. Enough, however, are included to illustrate the character of the courses offered. The institutions selected are from widely distributed parts of the country and include examples of several different methods of arrangement of this special work. The courses and arrangement of the work in the other institutions are for the most part similar to the ones described here. A statement prepared by the writer regarding the work of each land-grant college in the preparation of teachers is given in the chapter on agricultural education in the *Report of the Commissioner of Education*, for 1911.

The University of California recommends for the state teachers' certificates as special teachers of agriculture only students who have completed in their college course 12 semester-hours work in education and at least 27 hours in agriculture and agricultural education. The term semester-hour is used here and in following statements to mean one hour per week for one semester or half-year; a 4 semester-hour course therefore is the equivalent of 4 recitations a week for a semester. Seven distinct courses in agricultural education are offered, two of which only are arranged especially for students preparing for high-school work. "Agriculture in Secondary Schools" is a two-hour course and treats of the

STATE AGRICULTURAL COLLEGES OFFERING SPECIAL
OPPORTUNITIES FOR PREPARING TEACHERS OF
SECONDARY-SCHOOL AGRICULTURE

	Agricultural Students May Elect Courses in General Education	Education Students May Elect Courses in Agriculture	Special Elective Courses Offered in Agricultural Pedagogy	Prescribed Four-Year Course Offered for Teachers of Agriculture	Special One- Year Course for College Graduates Preparing to Teach Agriculture
Alabama Polytechnic Institute, Auburn, Ala.....	×
University of Arkansas, Fayetteville, Ark.....	×
University of California, Berkeley, Cal.....	×	×	×
Colorado Agricultural College, Fort Collins, Colo.....	×
University of Florida, Gainesville, Fla.....	×	..
Georgia State College of Agriculture, Athens, Ga.....	×
University of Idaho, Moscow, Idaho.....	×	..	×
University of Illinois, Urbana, Ill.....	×	..	×	×	..
Purdue University, Lafayette, Ind.....	×
Iowa State College of Agriculture and Mechanic Arts, Ames, Iowa.....	×	..	×	×	..
Kansas State Agricultural College, Manhattan, Kan.....	×	×	×
State University, Lexington, Ky.....
Louisiana State University and Agricultural and Mechanical College, Baton Rouge, La...	..	×
University of Maine, Orono, Me.....	×	×	×
Massachusetts Agricultural College, Amherst, Mass.....	×	..	×
Michigan Agricultural College, East Lansing, Mich.....	×	..	×	..	×
University of Minnesota, Minneapolis, Minn.....	×	..	×
Mississippi Agricultural and Mechanical College, Agricultural College, Miss.....	×	×	..
University of Missouri, Columbia, Mo.....	×	..	×
University of Nebraska, Lincoln, Neb.....	×	..	×

**STATE AGRICULTURAL COLLEGES OFFERING SPECIAL
OPPORTUNITIES FOR PREPARING TEACHERS OF
SECONDARY-SCHOOL AGRICULTURE—Continued**

	Agricultural Students May Elect Courses in General Education	Education Students May Elect Courses in Agriculture	Special Elective Courses Offered in Agricultural Pedagogy	Prescribed Four-Year Course Offered for Teachers of Agriculture	Special One- Year Course for College Graduates Preparing to Teach Agriculture
University of Nevada, Reno, Nev.....	×
Rutgers College, New Bruns- wick, N.J.....	×
New Mexico College of Agricul- ture and Mechanic Arts, Agricultural College, N.Mex.	×
Cornell University, Ithaca, N.Y.	×	×*	..
North Dakota Agricultural Col- lege, Agricultural College, N.Dak.....	×	×	..	×	..
Ohio State University, Colum- bus, Ohio.....	..	×	×
Oklahoma Agricultural and Mechanical College, Still- water, Okla.....	×
Oregon Agricultural College, Corvallis, Ore.....	×	..	×
Pennsylvania State College, State College, Pa.....	×
Rhode Island State College, Kingston, R.I.....	×	..
South Dakota College of Agri- culture and Mechanic Arts, Brookings, S.Dak.....	×
University of Tennessee, Knox- ville, Tenn.....	×	×	..
University of Vermont and State Agricultural College, Burlington, Vt.....	×	..
State College of Washington, Pullman, Wash.....	×	..	×
West Virginia University, Mor- gantown, W.Va.....	×	..	×
University of Wisconsin, Madi- son, Wis.....	×	×	×
University of Wyoming, Laramie, Wyo.....	×

* Two-year course in nature-study and agriculture.

aims, organization, and methods of agriculture as a high-school subject; "The Practice of Teaching Agriculture" is a graduate course and includes lectures, readings, and conferences, together with school observation and

practice of teaching. A course in the history of agriculture and two courses in farm management, including some work in rural economy, are given in the agricultural college and are recommended especially for students preparing for teaching. The twelve hours in education include the history of education, the principles of secondary education, either educational methods or school management, and the practice of teaching, a graduate course taken in connection with the course in the practice of teaching agriculture.

The University of Illinois, while allowing agricultural students to elect courses in the department of education, offers also a four-year prescribed course for prospective teachers of agriculture which includes 61 hours agriculture, 31 hours allied sciences, 17 hours general cultural subjects, 6 hours in agricultural education, and 8 hours in general education. The work is divided as follows, the figures indicating the number of hours devoted to the subjects:

Agronomy	21	Entomology	2½
Animal husbandry	16½	Zoölogy	5
Dairy husbandry	8	English	4
Horticulture	15½	Rhetoric	9
Secondary-school agriculture . . .	6	Economics	2
Thremmatology	2½	Education	8
Botany	6	Library science	2
Chemistry	15		

The course in secondary-school agriculture consists of a study of the features of agricultural science best adapted to high-school conditions; the best order and methods for their presentation; suiting the course and instruction to the special interests and needs of each school community; and the planning and execution of laboratory and field work. The courses in education include "the principles of education" and "the principles of secondary education." The essential difference between this course and that offered by the University of California is in the amount of technical agriculture required, the Illinois institution requiring 61 hours work against 25 in California. Illinois gives 6 hours work in secondary-school agriculture, California 2 hours, while in general education Illinois gives only 8 and California 12. It should be noted, however, that part of the required work for the teacher's certificate at the University of California is graduate work, while the courses listed above given at the University of Illinois are all undergraduate.

The University of Maine also offers a four-year prescribed course which includes 50 semester-hours of agriculture, 11 hours education, and 89 hours English, mathematics, sciences, and free electives. The course in education includes 6 hours in the history of education, 3 in the foundations of education, and 2 in child-study. The work in agriculture is all in the last three years of the course and includes agronomy, animal industry, horticulture, forestry, farm management, veterinary science, agricultural chemistry, and bacteriology. The amount of technical agriculture coincides more nearly with that given by the University of Illinois, but at the University of Maine no courses are given to bridge the gap between these courses and the professional courses in education, as is done at the University of Illinois and at the University of California. In other words, the student who has completed the course at the Maine institution must work out his own agricultural pedagogy and methods of teaching.

A better plan is followed by the Massachusetts Agricultural College, where a department of agricultural education was organized by direction of the state legislature in 1907, just before the passage of the Nelson amendment by Congress. The department has but one sort of students to deal with, those preparing to become special teachers of agriculture; therefore it can devote its entire energy to the special needs of these men. Six courses are given by the department, all open as junior and senior electives: general psychology, 3 semester-hours; history and philosophy of vocational education, 3 hours; general methods of teaching and special methods in agriculture, 2 hours; teachers' agriculture, 3 hours; seminar in education, 4 hours. The teachers' agriculture consists of a selection and review of such parts of the technical courses in agriculture, horticulture, and the biological and physical sciences as are adapted to the work of the public schools; the seminar in education is arranged for the special study of such topics as legislation and agricultural education, and the place and value of agricultural science in school courses. A department of rural social science gives 22 semester-hours elective work of special value to men preparing to teach in rural communities: agricultural industries and resources, historical and comparative agriculture, co-operation in agriculture, agricultural economics, and rural sociology. The prospective teacher entering this college takes the prescribed course for the first two years in common with all other students. This includes 10 hours in elementary agriculture and horticulture, 20 hours in physical

and natural sciences, 12 hours in English, 10 hours in mathematics, and 14 hours in French or German. In the last two years 3 hours are required in English and in political science. The student preparing to teach must take all courses in education and electives enough to make at least 17 hours of work each semester. The electives must be taken largely from courses in agriculture, horticulture, forestry, and the closely allied sciences, and from the courses in the rural social sciences. The graduate of this department has had therefore in his four-year course 42 hours in general cultural subjects, 20 hours in physical and natural sciences, 15 hours in agricultural education, and 67 hours electives chosen from courses in technical agriculture, horticulture and forestry, the physical and natural sciences, and the rural social sciences. As the institution is an agricultural college with no mechanic arts college or liberal arts college included, all courses offered are taught from the agricultural viewpoint and closely correlated with the technical work in agriculture.

A prescribed four-year course is offered in the School of Education of the University of Tennessee. The course includes even less agriculture than the University of California, 18 hours of work only being prescribed. This includes courses in agronomy, horticulture, animal husbandry, and dairying. Fifteen hours of work is required in education, the courses including psychology and philosophy, the history of education, and the science and art of teaching. In addition to this arrangement students in the regular agricultural course may elect a few courses in education in their Junior and Senior years.

The University of Missouri was one of the first of the land-grant colleges to make special provisions for men desiring to fit themselves for teaching agriculture. Now provision is made for those intending to become general-science teachers with a small amount of training in agriculture, and for those intending to prepare as special teachers of agriculture. The students in the first of these classes take all their professional work including agriculture in the School of Education; those in the second class take their technical courses in agriculture in the Agricultural College and their professional work in education in the School of Education. The School of Education offers three agricultural courses elective to all students preparing to teach. The "Administration of Agricultural Education" is a course dealing largely with the modern movements and methods in agricultural education from the standpoint of the superintendent of schools. No work in agriculture is a prerequisite. "Soils and Plant Culture," and "Animal Husbandry" are two

courses covering the fundamental principles of these subjects and are arranged for prospective teachers who have had no other courses in agriculture. To secure a life certificate as a special teacher of agriculture candidates must include in their four years' work, in addition to the required subjects in the School of Education, a minimum requirement of 15 hours in agronomy, animal husbandry, and horticulture from courses offered in the Agricultural College for the Bachelor's degree.

Mississippi Agricultural and Mechanical College has organized a "School of Industrial Education" which offers a special four-year course leading to the Bachelor's degree in preparation for teaching agriculture or the mechanic arts. Students receive instruction in the languages, mathematics, history and civics, chemistry, physics, biology, geology, psychology, history of education, logic, ethics, sociology, besides technical courses in agriculture given in the department of agriculture. A course called "A Study of the Agricultural High School" is offered for advanced seniors and graduate students. This course attempts to give the student a true conception of the kind of education the agricultural high school is intended to provide, and a full understanding of the service it is to render the community at large. It attempts also to give the student a practical knowledge of the most approved methods of scientific agriculture. A model farm connected with the School of Industrial Education is conducted to illustrate the proper function of the agricultural high-school farm. The institution is developing a one-year post-graduate course which will include work in general and agricultural education designed to fit its students for filling positions as principals of agricultural high schools. The study of the agricultural high school will be continued, and the men will be given practical work on the "model agricultural high-school farm" and practical teaching in the working boys' course offered by the college. This additional year's work is very desirable for men intending to teach, because the college is obliged to accept in its undergraduate courses a large number of men who have not had the advantage of a complete high-school course.

Several of the land-grant colleges have made provisions for prospective teachers of agriculture properly qualified in other respects to become special students in agriculture or agricultural education. The Michigan Agricultural College allows graduates of other recognized colleges and of state normal schools who have had at least two years' experience in teaching to select technical courses in agriculture, entering with regular

classes and taking the subjects in the same manner and at the same time as the regular students. The courses selected may be from those given in any year of the college course, but must be approved by the classifying officer. A similar opportunity is offered by the Kansas Agricultural College. The University of Maine offers a prescribed one-year course open to college graduates, high-school teachers with at least two years' experience, and normal-school graduates who have taught at least three years. The course includes agricultural botany, 2 hours; agricultural chemistry, 4 hours; agricultural economics, 2 hours; elementary veterinary science, 5 hours; economic entomology, 2 hours; bacteriology, 1 hour; agriculture, 34 hours; horticulture, 15 hours; forestry, 2 hours; school gardening, 1 hour; and education, 2 hours.

The work in agriculture in the normal schools is intended in all but a few cases as preparation for the required work in the elementary schools. Agriculture is a required subject in the common schools of 12 states, and in the rural schools of 5 others, and is required for teachers' certificates in 14 states. This has forced it into the curriculum of the normal schools of the states where the subject is required and has aided in its inclusion in the curriculum of normal schools in other states. During the past year agriculture as a separate subject, in more or less complete form, was taught in 104 state normal schools and in the 24 county training schools of Wisconsin. Many of these institutions have graduates of agricultural colleges for instructors in agriculture. The majority offer brief courses extending from 4 to 12 weeks. Many offer a full year's course and a few a course of greater extent.

The State Normal School at North Adams, Mass., offers a three-year course in agriculture as well as shorter courses in school and home gardening, agriculture, horticulture, and nature-study. The work is arranged and conducted with the co-operation of the State Agricultural College, which has for the past three years added to the faculty of the normal school an instructor and supervisor who has given a portion of his time to instruction at the normal school and to supervision at its three training schools, a second portion to the promotion of elementary agriculture and nature-study in the schools of Berkshire County, in which the normal school is located, and the remainder to instruction at the college in agricultural education. The three-year agricultural course includes all of the work in English, psychology, and pedagogy included in the regular two-year normal course. A graduate of the regular normal course, or a

college graduate, may take the agricultural work given in the three-year course in one year. The work is intended to prepare special teachers of agriculture for supervisory work or for teaching in secondary schools. It includes the following courses:

I. AGRICULTURE—Soils. Plant life, structures, functions, and diseases. Fertilizers, tillage, crops. Hotbeds, cold frames, and greenhouses. Farm live stock, poultry, bees. Dairying.

Horticulture—Flower and shrub gardens. Window gardens. Propagation, pruning, and cultivation. Orchards and small fruits. Forestry.

Insects and birds—Economic importance. Control of injurious insects.

Farm buildings and machinery.

Sanitary science.

(Agricultural physics and chemistry involved in preceding topics.)

Rural social science.

II. NATURE-STUDY—Its content and relation to science, literature, and vocational work.

III. MANUAL TRAINING—Carpentry, cabinet work, forge work, assembling farm machinery.

Drawing—Free-hand and mechanical, structural and decorative design, use of color, farm and building plans.

IV. ENGLISH, etc.

V. PEDAGOGY AND PSYCHOLOGY.

The Fourth District State Normal School at Springfield, Mo., offers two elementary courses and one advanced course. The elementary courses together extend through five terms five hours a week, and include a study of plant life, soils and soil fertility, farm crops, grain judging, enemies and diseases of plants and their control, crop rotation, feeds and feeding, live stock, poultry, dairying, and general farm management. The advanced course is a two-year course and includes one term's work in each of the following: dairying, animal husbandry, orcharding, farm management, poultry raising, and gardening. The institution has established a two-year agricultural high school in which the students devote one-fourth of the time to agriculture or domestic science, and one-eighth of the time to pedagogy as applied to rural-school teaching. The course is intended to prepare young men and women for rural-school work, and graduates will receive a state teacher's certificate to teach in rural schools. The institution owns a model farm and good equipment for agricultural instruction. The instructor in agriculture is a man trained especially for teaching that subject.

The State Teachers College of Colorado, at Greeley, maintains a department of agricultural education offering nine courses. The work is arranged especially for rural teachers, and a special diploma in elementary agriculture is given to students completing the course. The institution is equipped with a farm, nursery, gardens, greenhouse, and stables. The instructor is a graduate of an agricultural college. The courses given by the department are as follows, each being a sixty-hour course: Nature-study; elementary agriculture; school gardening; soils and crops of the farm; animals of the farm; dairy industry and poultry husbandry; horticulture on the farm; the farm home; and rural sociology and the rural school.

Among separate institutions for the colored race two are offering excellent opportunities to prepare for teaching agriculture in secondary schools—Hampton Normal and Agricultural Institute at Hampton, Va., and Tuskegee Normal and Industrial Institute at Tuskegee, Ala. The Hampton Institute offers a three-year vocational course in agriculture and a special one-year course to students who have completed the vocational course and are preparing to teach agriculture. The one-year course includes the chemistry of soils, manures, and fertilizers; chemistry of dairy products; fermentation; milk testing; geology in its relation to soil formation; biology in its relation to plant and animal life; farm engineering, including a study of farm machinery and structures; and farm physics, including soil physics, the relation of the atmosphere to agriculture, climatology, and the organic life in the soil and air. Students taking this course are required to take also the teaching course in the training school where they are required to teach classes in agriculture under a critic teacher. Upon the completion of both courses they receive a special diploma.

At Tuskegee students in the agricultural department preparing to teach may elect a Junior year course in elementary psychology in its relation to teaching and a Senior course in the history of education and methods of teaching. These courses in education may be taken as post-graduate work by students who have completed the undergraduate work at Tuskegee or its equivalent elsewhere.

II. THE VOCATIONAL AGRICULTURAL SCHOOL

WITH SPECIAL EMPHASIS ON PART-TIME WORK IN AGRICULTURE

R. W. STIMSON

Agent for Agricultural Education, Board of Education of Massachusetts

DEFINITIONS

Within a year or two noteworthy attempts have been made to define vocational education. Vocational education, in the usage of the state of Massachusetts, includes all forms of specialized education, the controlling purposes of which are to fit for useful occupations. Agricultural education, as a phase of this subject, means that form of vocational education which fits for the occupations connected with the tillage of the soil, the care of domestic animals, forestry, and other wage-earning or productive work on the farm.

The National Society for the Promotion of Industrial Education, at its last annual meeting, adopted the report of a sub-committee which had been directed to give careful consideration to Senate Bill No. 3, now pending in the Senate of the United States, introduced by Senator Page, of Vermont, and to a similar antecedent measure known as the Davis-Dolliver Bill. That committee reported favorably on the general proposition of federal aid for vocational education, including agricultural, and in order that its recommendations might be put in the most constructive form, the committee drafted, by way of suggestion, a measure which seemed to it to incorporate the principles which should prevail in the promotion of vocational education with federal aid. In the measure drafted, sec. 1, under the heading, "Construction," includes the definitions of vocational education and agricultural education above given.

We have, then, something like a general agreement by those who are advocates of vocational education throughout the country, in favor of the definitions above given; and in this particular portion

of the symposium on secondary agricultural education it will be understood that the above definitions are adopted.

It is understood, further, that in this division of the symposium, congressional district schools, county schools, and state schools in undivided districts should be discussed. It has been suggested, moreover, that perhaps the most vital problem in the whole movement at present is the problem of making agricultural instruction really vocational, and that therefore the major portion of this part of the symposium would perhaps better be devoted to discussing ways and means of making agricultural education vocational.

SOURCES OF INFORMATION

A study of legislation upon industrial education in the United States, including agricultural, is now available in *Bulletin No. 12* of the National Society for the Promotion of Industrial Education. The *Report of the Michigan State Commission on Industrial and Agricultural Education*, December, 1910, contains a report of the sub-committee on rural and agricultural education, pp. 18 to 32, in which are discussed the state secondary school of agriculture, the congressional district secondary school of agriculture, and the county school of agriculture, the discussion being based on a careful study of representative institutions of these several types, and supplemented by appendices giving statistics and typical courses of study of these several types of schools. It is understood that this report may be had by members of the National Society for the Study of Education.

Of the congressional district agricultural schools, those of Georgia may, perhaps, be taken as representing an approved type. Two reports of those schools have been published as bulletins of the University of Georgia, and doubtless may be had by members of the Society.

The county schools of agriculture and domestic economy in Wisconsin form the subject of *Bulletin No. 242*, Office of Experiment Stations, United States Department of Agriculture. This bulletin was issued November 9, 1911, and was prepared by Mr. A. A. Johnson, principal of the La Crosse County School of Agriculture and Domestic Economy, and recently appointed superintendent of the new Milwaukee School of Agriculture and Domestic Economy. This bulletin, of course, is available for general distribution. It gives particulars regarding all of the Wisconsin county schools, including statistics,

courses of study, half-tone illustrations, and the Wisconsin law providing for the establishment and maintenance of the schools. It appears to be needless, therefore, to repeat in the brief compass allowed in this paper facts and figures so readily available in the publications above referred to.

The committee in charge of arranging the program of the symposium intended that the discussion of state schools in undivided districts should have reference to such agricultural schools as the three in New York and those in Massachusetts, California, and Minnesota. Though not originally parts of state systems of agricultural schools, they might become such if systems should eventually be established. The United States Department of Agriculture, in its *Circular No. 97* of the Office of Experiment Stations, issued May 23, 1910, gave a complete list of the institutions in the United States giving instruction in agriculture. There is great diversity in equipment and methods among the state schools in undivided districts. An attempt has been made to secure literature, descriptive of these schools, from each. Some personal visits have been paid and information from those who have visited the schools has been sought.

It is announced that the chapter on agricultural education from the annual report of the United States Commissioner of Education for 1911 will be ready for distribution about December 1, with contents as follows: a digest of important legislation in the various states during the past year; a complete summary of the status of instruction in elementary and secondary agriculture in each state; a description of some types of secondary agricultural schools; and a summary of the work of the state agricultural colleges in preparing special teachers of agriculture for secondary schools.

The Yearbook of the United States Department of Agriculture has for a number of years contained reports prepared by Mr. D. J. Crosby, Specialist in Agricultural Education, of progress in the establishment of secondary agricultural schools, their equipment, their work, and their control and support.

CONGRESSIONAL DISTRICT AGRICULTURAL SCHOOLS

On the whole, perhaps we cannot do better than to accept the Georgia schools as good representatives of the congressional district type. The Georgia schools were manifestly intended to be strictly vocational.

The schools are made, by the act providing for their establishment and maintenance, branches of the State College of Agriculture, a department of the University of Georgia, but judging by standards of certain other states, the university has been required by the law rather to adjust itself to these schools than to require the schools to adjust themselves to it.

A very practical course of study is provided, and is made uniform, in general, for all the schools. It is essentially an English, scientific, and practical course. From it all other languages than English are omitted. The report of a committee which suggested foreign languages as optional studies was rejected. The law distinctly states that—

The course of study in state schools shall be confined to the elementary branches of an English education, and practical treatises or lectures on agriculture in all its branches and the mechanic arts, and such other studies as will enable students completing the courses to enter the Freshman class of the State College of Agriculture on certificate of the principal.

The regulations of the schools provide that the school days be so arranged as to assure at least three hours a day of classroom work in agriculture and related sciences, in mathematics and history, and at least three hours a day on the farm or in the laboratory or shop, the hours in actual farm work to be regulated by the exigencies of the farm; the program being such as to provide for the alternation of work and study among the classes morning and afternoon, thereby securing continuous operation of the farm and the shop. Each school was required to have at least 200 acres of land.

It was provided that an account of all receipts from the sale of products of the farm or shop, which were not consumed, should be kept, and one-half of said receipts for each year should be set aside as a fund to pay the students. It was further provided that each pupil, having performed to the satisfaction of the principal, his duties for an entire school year, receive his pro rata of the said fund, the amount going to each pupil not to exceed \$100, and the balance, if any, to be placed in the general fund of the school.

One of the most important sections of the act provides that after the first buildings are erected, before the opening of such schools, which shall be only such as are absolutely necessary for temporary use, all work on, in, and about said schools, or on the farm, or on or in the barns or shops connected

with said schools, whether it be farming, building, care of stock, or work of different kind, shall be performed exclusively by the students of said schools, under such regulations for the proper division and alternations in such work as may be provided by the trustees.

The trustees, in ruling under the above act, have even gone so far in providing for the attendance of older men as to decree that "no one shall be allowed to enter who does not take the required practical work; if only literary work is desired, they should go elsewhere."

The fifth section proposed for the control of these schools suggests the way by which the regulation that work on the farm shall be done by the students may be carried out, viz., that

One-fourth of the students, or such number as the principal may determine as necessary to continue the operation of the farm and shop, be required to remain on the farm during the vacation, and for work required during this time, the students be given fair compensation. Students of the third and fourth year may be given acre plots for individual cultivation, or small farms for supervision, the profits to be their own; the same, however, to be first applied to payment of their dormitory or other expenses.

From the above it will be seen that strong emphasis is laid in the Georgia schools upon productive work actually performed by students, and that the method is that of providing on the school premises sufficient land for enabling this productive work to be done.

The manual labor of the students is divided into two kinds: (1) Instructive labor in practicums in the laboratory, field, shop, and home under the guidance of the instructor for nine hours a week, for which no other compensation is given than the skill acquired or instruction received as in any other school. (2) The uninstrusive labor for nine hours a week on the farm, in the dormitories, shop, or elsewhere for the primary benefit of the school in its maintenance, and only secondary in its instructive benefit and not necessarily under the instructor. The latter is credited on boarding expenses each month. Each pupil is given fifteen hours a week of classroom instruction, nine hours a week of laboratory, field, shop, and home instruction, or twenty-four hours of instruction and nine additional hours for the support of the school and incidentally of practical benefit to the pupil. Thus thirty-three hours of the pupil's time each week is assigned or a little over five hours a day in head and hand work. It is stated that this gives ample time for study and recreation.

The second annual report of the University of Georgia, November, 1911, p. 29, shows that the income from the farms varied from \$395

in the ninth district to \$3,716 in the first district; the total farm products for the eleven districts being \$22,832. There is every indication, furthermore, that more rather than less emphasis is to be put on the actual productive farming enterprises of the students carried out on the school premises. With a proper correlation of classroom and field instruction, these schools should afford vocational agricultural training of a very high order.

The course of study in the Georgia schools extends over four years. The remark made above, that the law providing for the establishment and maintenance of these schools rather required the university to adjust itself to the schools, than the schools to adjust themselves to the university, is justified by the fact that boys without training in languages, and with only such training as is prescribed for carrying out the regulations above stated, must be admitted to the College of Agriculture. Admission, moreover, must be without examination and on certificate of the principals of the several schools.

COUNTY AGRICULTURAL SCHOOLS

Of county agricultural schools, perhaps we cannot do better than to accept those of Wisconsin as fairly representative. These schools are spoken of both in *Bulletin No. 242*, United States Department of Agriculture, Office of Experiment Stations, and in the *Report of the Commission upon the Plans for the Extension of Industrial and Agricultural Education*, Madison, Wis., 1911, as *trade schools*. The last named report, p. 122, says "these are essentially trade schools and should always be maintained as such." Foreign languages are omitted. Other significant omissions are algebra and geometry.

Bulletin No. 242 gives the following as points in common for all of the schools:

The county agricultural schools of Wisconsin are co-educational.

The course of study covers a period of two years—eight months each.

Each school receives support from the state, amounting to \$4,000 a year.

All schools require for entrance that students shall have completed work equal to the eighth grade.

All schools admit students from outside their respective counties.

Institutes of various kinds are conducted at each of these schools.

Again *Bulletin No. 242* gives the following as some ways in which these schools help the farmers:

Prepare plans for farm buildings.

Make suggestions for remodeling old buildings.

Build forms for and supervise the construction of cement silos, watering troughs, and similar structures.

Test all kinds of dairy products.

Assist in the selecting of farm animals.

Plan drainage systems.

Test seeds for germination.

Test cattle for tuberculosis.

Test soils.

Recommend systems of rotation.

Half-tone illustrations show classes of students removing stumps with dynamite; raising the form for and constructing a concrete silo; operating the level; pipe fitting; forging; carpentering; road constructing with a road machine and studying various types of gasoline engines. The illustrations show the boys in overalls and evidently acting as participants in the various operations.

Each county school has some land, but repeatedly it is stated that this land is used for experimental and demonstration purposes. No emphasis is laid on the fact that no possible or actual participation is allowed the students in actual productive farm work on the school premises. Moreover, in the list of ways in which these schools help the farmers, the things done appear to be done by members of the staff and not by students in the school. Students evidently use school time for study and for observation, and dependence is placed upon the ability of the students on graduation to apply the instruction they have received in the school for their own benefit.

The Wisconsin Commission upon "Plans for the Extension of Industrial and Agricultural Education" found that the county agricultural schools "serve a class of people the country and high schools fail to reach," that "their value has been clearly and unquestionably demonstrated"; and it recommended that the limit of state aid for each be raised to \$6,000 a year, "but with the provision that if more than \$4,000 be paid by the state that the county shall contribute not less than an equal amount." The original limit for each had been \$4,000 a year from the state.

The trade school, or distinctly vocational character of the instruction given by these schools, was further emphasized by the proposed

relationship of these schools to the university. The Commission recommended that the University of Wisconsin "establish in the College of Agriculture a 'continuation course' for graduates of county agricultural schools." Thus it is seen that the kind of training here considered is sharply differentiated as to field, content, and methods from the ordinary high, or college preparatory school, on one hand, and, on the other hand, from the training for professional service provided in the regular classes of the college of agriculture.

STATE AGRICULTURAL SCHOOLS IN UNDIVIDED DISTRICTS

In elaborateness of land, buildings, equipment, and staff a pretty sharp line can be drawn between two kinds of State Schools in states which have not yet been divided into districts for the development of vocational agricultural schools. These are (1) schools operated in connection with the state colleges of agriculture, and (2) those which are not.

At state agricultural colleges.—Without giving a complete list, it may be well to note here that vocational agricultural schools are now operated in connection with, and upon the premises of, the colleges of agriculture in Minnesota, Montana, Colorado, West Virginia, New Hampshire, and Connecticut.

In such cases the work of the school is primarily practical. It does not differ materially from that of the congressional district, or county agricultural school, in entrance requirements. The courses vary in length from six to nine months a year and from two to four years.

When the demands for vocational agricultural training are sufficiently limited so that a single school may suffice for a state, it would seem to be highly advantageous that the school should be located at the state agricultural college. Duplication of expenditure for land, buildings, and equipment would thus be avoided. The students might be trained in part by assistants, but first or last would become acquainted with, and feel at first hand the influence of, the state leaders in agricultural research and education. In most cases the agricultural college teaching staffs might be expected to adapt their school instruction to the real needs of their school students, as distinguished from their students of college grade. Certainly schools so located have stood high in the estimation of the people. President Northrup once said that there were people in Minnesota—not a

few—in whose minds the School of Agriculture stood for the whole University.

Apart from state agricultural colleges.—In other states, New York and Massachusetts among the number, it has been considered inadvisable to maintain vocational agricultural schools on the premises of, and in immediate connection with, the state colleges of agriculture. In these cases the resources of the schools are more or less limited.

The courses of these schools vary greatly in length and character. Some differ but slightly from the state agricultural colleges of earlier days. Others maintain two-year courses of six or of eight months each, from which have been omitted such subjects as algebra, geometry, and all instruction in languages excepting English. Some utilize a limited amount of land for demonstration and experimental purposes. Others provide for more or less practical farm work on the school farms.

In fact, these schools are proving to be most interesting and valuable experiment stations in methods of vocational agricultural training. Perhaps it is not too much to say that out of the very weakness of some of these schools, in land and equipment, is coming the best strength of the whole movement for a type of agricultural training which shall be genuinely vocational. That is to say, vocational efficiency at the end of a course of training appears to bear no directly proportionate relation to the comparative amounts of money invested in the school plants and their cost of operation; and, similarly, it appears to depend more on points of view and on methods among the various staffs than upon faculty numbers and salary budgets.

Productive work of a high order of efficiency is coming to be considered the real test of all systems of vocational education of secondary grade. Particularly in vocational agricultural education it is coming to be accepted that the training must be such as to develop both skill and managerial ability. The competent farmer must be, not only expert in the varied technique of his calling, but also a sound and progressive business manager.

Neither skill nor business ability can be learned from books alone, nor merely from observation of the work and management of others. Both require active participation during the learning period in productive farming operations of real economic or commercial importance. A masterful, constructive imagination may accomplish much for him who possesses it; and for his needs books and observation may finally

result in vocational efficiency. The difficulty is that such powerful imagination is so rare as to constitute him who has it a genius, far removed from the common run of boys fourteen to eighteen or twenty years of age who live on farms, who expect to follow farming for a living, and whose training is not likely to extend beyond that afforded by the vocational agricultural school.

In general, if there is a defect in the large agricultural schools which boys must leave home in large numbers to attend, and which in order to secure adequate attendance to justify their cost must, apparently, limit their training to six or eight fall and winter months, it is the defect of putting too great reliance upon books and observation, to the exclusion during the intensive learning periods of active participation in the type, or types, of productive farming the boys intend to follow after graduation. Too great, one may almost say in the cases of many of the boys, fatal reliance is put on the ability of the students, once well grounded in sound theory, to put that theory into successful practice on their own farms, alone and unaided.

Even if the large school undertook to put its plant and equipment to the strictest possible productive farming uses of a profitable commercial character, and to induct its students into its aims and to school them in its methods, its efforts would be more than likely to break down through sheer weight of numbers. School farms at present can hardly be claimed to be thoroughgoing commercial farming concerns. The most flattering school photographs, where the aims of the school are most emphatically practical, show by far too few actual participants, by far too many spectators. To see the thing done, however good the demonstration, is not to do it one's self. To participate in the carrying out of an enterprise planned and ordered by another, by even an agricultural school instructor, may leave one little better than a gang-laborer. The pittance paid per hour, where any pay at all is given, can hardly, as an incentive to keen interest and alert action, be considered comparable to the reward the student might hope to realize from an independent enterprise planned and executed by himself and wholly for his own profit or that of his family. It must be feared that, however excellent may be its work in piecemeal demonstrations and in certain really valuable experiments, school farming must from a strictly commercial point of view always remain more or less artificial.

Perhaps the best use to which an agricultural school, large or small, can put its own land and equipment is that of demonstration and experiment. Most schools appear to have adopted this view. It is not clear, however, that any considerable number have adopted methods of training calculated to overcome their defects as agencies for graduating students thoroughly trained in the practice as well as in the theory of profitable farming.

Most of the schools are far from confining their activities to their own premises and regular school classes. What may be done, supplementary to the usual school work, has been admirably set forth by Messrs. D. J. Crosby and B. H. Crocheron in *Separate No. 527*, from the yearbook of the United States Department of Agriculture for 1910, under the title "Community Work in the Rural High School." Suffice it, for our present purpose, to say that these outside efforts are directly planned for the benefit of adults, for persons not in school.

The problem, then, of providing for actual participation, both as manager and as worker, in productive farming, simultaneously with his classroom instruction, on the part of the boy in the agricultural school, may fairly be looked upon as the most startling and stupendous problem in this great field of vocational education. How shall it be solved?

Georgia has attempted its solution, apparently, by requiring the officers and students of the congressional district agricultural schools to create a considerable portion of the equipment and buildings of those schools, and to improve the land and make it commercially productive; also, by proposing a method of reward for competent work, in part by payment per hour for half the labor performed, in part by a plan of profit sharing within fixed limits, and in part by the assignment to each student of an acre or more of land to be cropped for his exclusive benefit. It further proposes to require the attendance of one-fourth of the students through the entire growing and harvesting seasons. The citations from the Georgia law and proposed regulations published by the state authorities made responsible for the work of these schools, given when these schools were before discussed, show plainly the trend of vocational education in that state.

The Massachusetts plan.—Massachusetts has developed another plan for the solution of this problem. This plan was fully set forth in a report submitted to the legislature in January, 1911, by the Massa-

chusetts Board of Education. The legislature has provided state aid for carrying this plan into effect. A vocational agricultural school may be established by any town or city, or by any group of towns or cities which may voluntarily form themselves into a district for this purpose. The state has not been definitely divided into districts by the legislature—congressional district, county, or any other.

Provided an agricultural school, large or small, taught by one teacher or more, with or without school land and live-stock, with training extending over two, three, or four years, a school in general farming or in such specialized production as market gardening—provided an agricultural school is approved by the Massachusetts Board of Education as to “organization, control, location, equipment, courses of study, qualifications of teachers, methods of instruction, conditions of admission and employment of pupils and expenditures of money,” the community or voluntary district maintaining it is entitled to reimbursement from the treasury of the state to the extent of one-half the amount expended in maintaining the school from funds raised by local taxation. The state contributes nothing toward the initial cost of land, buildings, or equipment.

Since the report in which this plan was set forth is not available for distribution, the original edition having been exhausted, it has been suggested that its dominant feature should be given here. That dominant feature has been termed “Part-time Work in Agriculture.”

PART-TIME WORK IN AGRICULTURE

Part-time work in agriculture is the utilization of home land, equipment, and time, outside school hours, for practical training supervised by the school. The term “part-time work” is a descriptive expression, brought over from current discussion of certain forms of industrial training, for use in unfolding the possibilities of this proposed type of training in the field of education in agriculture. Part-time work in industrial education means that the student spends part of the time required for his training in a shop or manufacturing establishment, and part of the time at the school building; both school and shop work, however, being intimately related and supplementary to each other.

Part-time work as applied to agricultural education means that the student must spend part of the time required for his education in productive farm work, preferably at home, and part of his time at the

school; the farm work and school study to be closely correlated by the school at points selected from season to season or from year to year, and to be given the highest possible educational value by competent school supervision.

Equitable.—The same causes that have brought about a widespread demand for co-operation between school and shop in industrial training make just as necessary similar co-operation between the school and the home farm in agricultural training. Historically, shop and farm at one time gave the youth all his vocational training. Of late the tendency has been, under the stress of modern conditions, to throw upon the schools almost the entire responsibility for the industrial and agricultural education of minors. It is becoming increasingly apparent that the school cannot meet this difficult and expensive burden, unaided. It therefore seems to be equitable that the schools shall bestow the related theoretical instruction which they are so well designed to give, leaving to factory and farm the task of giving, under expert direction, the practical experience which they are well equipped to confer.

Economical.—Such part-time work reduces the cost of agricultural training of secondary grade so as to place effective training for the farm within the reach of many communities which would otherwise be unable to secure it. Part-time work obviates the necessity of sending the boy away from home in order to secure the benefits of agricultural training. The cost of living for the boy is less at home than it would be at a boarding school. Parents are deprived of the services of the boy during only a portion of the day.

Effective.—Co-operative work between the school and the home farm is the most effective known means of trying out, under the conditions of individual farms over widely scattered areas, methods which have proved to be profitable elsewhere, as, for example, at a State Agricultural Experiment Station. Such co-operation furnishes the only experimental means by which each boy can try out the merits of the home farm as an agency for producing profits, when treated by the best-known methods; that is to say, part-time work furnishes the only means whereby the principles and methods taught by the school may be positively adapted by the boy to the economic conditions on the farm on which he may spend his working days. Part-time work thus gives to agricultural teaching the reality of actual life, as but little school training can give it.

It is believed, in short, that every purpose of economy in the establishment and maintenance of a system of agricultural schools, and of efficiency in the education provided, will be insured by utilization to the largest possible extent of home land, equipment, and time in the training of boys for the successful pursuit of farming.

In a state system.—Under the “part-time work” plan, developed into a system for a whole state, centers would naturally be selected. The instruction would then be adapted to the kinds of farming prevalent in the districts surrounding those centers. The practical applications of the instruction would thus be subject to the obstacles continually encountered under the economic farming conditions found in any given district; just as they would, also, be aided by all the influences in that commonwealth which make for the improvement of farming. The plan, as an educational process, is believed to possess unquestionable merit, because farming activities readily resolve themselves into what may be termed farming “projects.”

PROJECT METHOD FOR PART-TIME WORK

A farming project is a thing to be done.

1. *Improvement projects.*—The thing done might contribute some element of improvement about the farm, as constructing a concrete walk leading to the front door, the planting and nurturing of shade trees, the making and maintaining of an attractive lawn.

2. *Experimental projects.*—The thing done might be of an experimental nature, as the planting of an untried variety of fruit, the feeding of an untried ration, the testing of an untried spraying mixture, or the testing of one or another of much advertised roofing materials.

3. *Productive projects.*—Finally, the thing done might be of a productive nature, as the growing of a crop of clover or alfalfa, the growing of a field of potatoes, the growing of a crop of silage corn, or the production of eggs for the market.

A farming project is, further, something to be done on a farm, which would involve a limited and definite amount of equipment, materials, and time, and which would be directed toward the accomplishment of a specified and valuable result.

1. *Improvement.*—An improvement project might be limited, for example, to a given length and width of concrete walk, constructed of

a given kind of stone, sand and cement, costing not to exceed a given sum of money, and requiring not to exceed a specified amount of time.

2. *Experimental*.—An experimental project might be limited, for example, to the planting of a given number of trees of an untried fruit, on a piece of ground which could well be spared for such a hazard, and involving a cost in time and money which it was felt could be afforded at a given time for this risk.

3. *Productive*.—A productive project might be limited, for example, to the growing of a given area of clover or alfalfa, at a given cost for seed, fertilizer, and labor, and for the securing of a specified quantity and value of feeding stuff or roughage.

Finally, a farming project, as the term is here used, is a thing to be done on a farm, which, in the preparation for doing it and in the carrying of it out to a successful result, would involve a thoroughgoing educational process.

1. *Improvement*.—The improvement project of constructing a concrete walk to the front door might involve the study of the nature of cement; its action on sand, and gravel or broken stone; its resistant qualities to the weather; the seasons at which it could be used; its cost, as compared with other materials, such as boards, plank, tar, brick, flagging, and asphalt; the mathematical determination of the proportions of cement, sand, and stone to be used; the geometrical determination of the sections into which it should be divided, and whether it should be crowned or flat; the geographical sources of the raw material; and the market conditions for purchasing cement.

2. *Experimental*.—The experimental project of planting an untried variety of fruit might involve the study of the probable adaptability of the variety selected to the soil, the climate, and the market demands within reach of the farm.

3. *Productive*.—The productive project of growing a crop of clover or alfalfa might involve the study of the various varieties of clover; the comparative adaptability of these varieties to the given field on which the crop was to be grown and to the climate of the locality; the most reliable places for the purchase of seed; the best time for seeding; the best time for cutting; the best methods of curing and storing; the mathematical calculation as to the saving in cost of feeding stuffs which the crop would afford; the chemical elements it would furnish

in the ration; and the chemical, biological, and mechanical effects on the soil in which it would be grown.

A complete definition of a "project" as here used has three elements.—Thus, it will be seen that a complete definition of a farming project as here used involves the three elements of (1) something to be done on a farm, (2) under specified conditions and for a specified valuable result, and (3) requiring a thoroughgoing training.

Project fields or classes.—There are certain broad, general fields in which numerous projects might be found. Among these are:

Vegetable gardening.

Flower gardening.

Landscape gardening.

Orcharding.

Small fruit growing.

Growing of general farm crops.

Farm forestry.

Greenhouse crops.

Production of poultry products.

Beekeeping.

Swine husbandry.

Sheep raising.

Horse raising.

Dairying.

Agricultural physics and mechanics as applied to farm buildings, drainage, irrigation, and providing and maintaining farm machinery.

Major projects.—Projects within the above general fields might be major projects. Of major projects, the following may be given as examples:

1. *Caring for the kitchen garden.*—Under the direction of the school, a boy over fourteen years of age might be required to cultivate the kitchen garden for supplying the family with vegetables or small fruit.

2. *Keeping a pen of poultry.*—Under the direction of the school, he might be required to keep a pen of, let us say, twenty-five birds, for the purpose of producing a net profit on the enterprise.

3. *Caring for a selected part of the orchard.*—Under the direction of the school, he might be required to care for a part of the home orchard, say five apple trees, so as to improve the quality of the fruit and thus gain a larger net return.

4. *Raising a specified crop of potatoes.*—Under the direction of the school, he might be required to raise on the home farm an acre, or a tenth of an acre, of potatoes, according to his age and strength, so as to secure the best possible crop and the largest possible financial return.

5. *Caring for one cow.*—Under the direction of the school, he might be required to care for at least one cow in the home herd, with a view

to securing from her the highest production of which she was capable, and to determining whether she were yielding an adequate profit.

Major and minor projects.—While the above does not constitute by any means a complete list of possible major projects, it is intended to be suggestive of the many and diversified kinds of projects that might be feasible for use in the part-time work under consideration. A major project may include a great many minor projects.

Minor projects are related to major projects as parts to the whole.—Minor projects include all the diversified activities which the boy must perform in order to bring the major project which he has undertaken to a successful conclusion.

Details of a project suitable for first- or second-year instruction.—Later in this discussion details are given of a project suitable for use with third- or fourth-year students. The subject in that case is a staple product likely to be grown on every farm, or at least in every farm garden.

At this point it may be desirable that the possible working out of the project method of instruction should be illustrated by details of a subject which would be suitable for use with students of the first or second year.

In the list of major projects above given, the second, "Keeping a Pen of Poultry," will, perhaps, best serve this purpose. This project permits of clear analysis. It is sufficiently familiar to make intelligible such technical terms as it may be necessary to use. It deals with a branch of agricultural production found on every farm and at many village homes; yet a branch from which, when conducted as a separate undertaking and on a strictly business basis, it is very difficult to make a profit. It has to do with farm products which are of very great economic importance for the advancement of agriculture in Massachusetts, at any rate; since this state, while admirably suited for poultry keeping, imports \$25,000,000 of poultry and eggs annually, and produces less than \$6,000,000 worth per year. (See *Agriculture of Massachusetts*, the report of the Secretary of the State Board of Agriculture, 1909, p. 119.)

Owing to the attention now being given poultry keeping by the agricultural colleges and experiment stations, materials for teaching the subject scientifically and practically are increasing, and make this one of the most promising lines of project instruction for school use.

Poultry keeping, moreover, affords one of the best projects for transition from the boy's treatment of animals as pet stock to his treatment of them as vital factors in economic agricultural production.

Important as this poultry project is, however, it will, of course, be understood that there are many other projects suitable for first- and second-year use. This project is but a single example of the many which might have been given.

Minor projects.—Suppose the major project in preparation for purposes of instruction be No. 2, above given, "Keeping a Pen of Poultry." Then certain minor projects necessary for carrying out this major project might be:

1. *The building of a poultry house* (if necessary), according to plans and specifications worked out at the schoolhouse. This minor project in turn could be broken up into a number of subordinate minor projects necessary to its successful completion, such as:

(a) The selection of a site for the poultry house.

(b) The adoption of a plan for the poultry house.

(c) The materials entering into the construction of the poultry house (involving kind, cost, and availability).

2. *The selection of birds*, as determined by the purpose in keeping them (whether for show stock or utility, breeding or egg producing). This minor project in turn might be broken up into a number of subordinate minor projects necessary to its successful completion, such as:

(a) The choice of type and breed.

(b) The choice of breeding stock.

(c) The choice of method of beginning the project.

3. *The feeding of the poultry.*—This minor project might in turn involve a number of subordinate minor projects necessary to its successful completion, such as:

(a) The selection of the kinds of feed.

(b) Working out problems of feeding.

4. *Other minor projects* within the major project of "Keeping a Pen of Poultry," which might also be analyzed into numerous subordinate minor projects, each necessary to the successful performance of the larger minor project and the major project of which it forms a part, are:

(a) The production of eggs for profit.

(b) The production of chicks by incubator.

- (c) The care of chicks by artificial brooding.
- (d) The rearing of chicks.
- (e) The handling of young stock.
- (f) The fattening and killing of poultry.
- (g) The marketing of eggs and birds.

In like manner, every major project similar to those heretofore described, chosen by the school for purposes of instruction, might be analyzed into the minor projects of which it was composed, both in order that the various activities of the boy in the successful accomplishment of the major project might be effectively directed and supervised, and, as we shall see later on, in order that the theories and principles related to the different phases of his task might be given at the time when they would be most effective from the practical and the educational points of view.

Three factors must, it is believed, determine the measure of success in any given plan of part-time work in agriculture: (1) the farmer and his farm; (2) the school and its agricultural supervisor; (3) the boy and his projects.

1. *The farmer and his farm* must constitute the fundamental factor in the practical training of the boy. There can be little effective work in the field of part-time training for the farm without a reasonable spirit of co-operation on the part of the parent. Parents in Massachusetts are required to pledge co-operation.

There are at least three ways in which the parent can aid in making the directed farm experience of the boy most educative: (a) in the use of the home plant; (b) in the use of the home time of the pupil; (c) in giving the boy's projects economic importance.

(a) *In the use of the home plant.*—One of the most essential features of the co-operative part-time plan between home and school is that the parent shall be willing to devote from time to time in accordance with the plans of the supervisor or teacher in charge of the work, a reasonable portion of his buildings, orchards, garden, pasture, forest, and other fields, and of his implements and machines, animals and materials, to the directed training of the boy.

(b) *In the use of the home time of the pupil* the fullest value of the agricultural course comes from the fullest possible participation of the boy in the ordinary routine of farm work as usually carried out by the parent; but the greatest benefit of the school cannot be had without the use

of a part of the boy's time, during the hours spent at home, for strictly school purposes. The following are a few of many illustrations of what might be the directed use of a part of the home time of the pupils in the pursuit of projects suggested and directed by the school:

- A.* The boy may help with the milking throughout his course, where the object is to get the cows milked as quickly as possible, and where no records are kept. During certain months of at least one year, the school should require whatever time may be necessary for keeping an accurate record in pounds and ounces of the yield of a part of the herd. This may be limited to the weighing of milk from a single cow, and giving the cow credit for what she produces.
- B.* It may be part of the boy's business to assist in feeding the cows. During part of his course, sufficient time should be given for weighing the ration and charging at least one cow with what it costs to keep her.
- C.* In the ordinary routine to which he has been accustomed in milking, much or little attention may have been paid to cleanliness of cows, utensils, or the person and clothing of the milker. During part of his time in school, the boy should be given whatever time may be necessary for milking at least one cow and preserving her milk under absolutely sanitary conditions, and for sampling the milk for bacteriological tests.
- D.* In the ordinary cropping of the farm, much or little attention may have been paid to leguminous crops. But during one season at least, facilities should be given the pupil for growing a patch of moderate size of clover, and for observing the effect of introducing a large proportion of clover into the ration of the cow.
- E.* In the ordinary conduct of the farm, much or little attention may have been paid to the selection and testing of corn for seed. But prior to planting, one season at least, the boy should be given whatever time may be necessary for making germination tests of the corn which it is proposed to plant.
- F.* Also, during one season, the boy should be given control of a portion of a cornfield for making an "ear to row" corn test; for observing the difference in yield from different ears of corn—all the corn from one ear being planted in one row and all the corn from another ear being planted in another row.
- G.* In the ordinary routine of the farm, it may be the business of the boy to tend the poultry. During at least one year, he should be given control of at least one pen of poultry, and facilities for feeding a balanced ration and trap nesting individual birds for comparison of productivity in laying.

H. It may be part of the usual work of the boy to help cultivate and harvest the potato crop. During one season at least, he should be given facilities for testing the value of the use of formalin for the prevention of potato scab, and of the Bordeaux mixture for protection against potato blight.

(c) In giving the boy's projects economic importance, the active aid of the parent would again be almost indispensable.

A. Keeping accounts.—Whether or not the parent were in the habit of keeping books, it would be vital to the success of the school training that accurate accounts of outgo and income should be kept with regard to certain home projects directed by the school. Every boy should be taught business-like methods for carrying on work. Modern business methods provide for discovering exactly where money is made, and where it is lost, at any stage or in any part of a given enterprise.

The boy should be given opportunity for testing, under his home conditions, the value of methods which have proved efficacious in business. The school, to be effective, must teach economic production in every phase of farm life for which it gives preparation. Accounting is necessary to any intelligent comparison of the effectiveness of the method advocated by the school with that of a method previously or subsequently followed.

B. Projects as business enterprises.—If the experiences of the boy in the farming projects are to be educative to the largest degree, it is believed that they should be conducted strictly as business enterprises. Four methods of meeting the problem of the cost and profit of these directed farming operations would be possible: (*a*) the parent might meet all the cost, and give the boy all the profit; (*b*) the parent might meet all the cost, and retain all the profit; (*c*) the parent might meet all the cost, and share the profit with the boy; (*d*) the boy might receive the net profit, after the cost of the project had been paid.

From the educational point of view, the last method, by which the boy, after conducting the given project as a business enterprise, would profit only to the extent to which his total receipts exceed the total cost of the enterprise, is believed to be in every way preferable. By this method the boy would learn, once for all, through his own experience, that there can be no product without cost, and no profit without excess of receipts over all expenditures. After such an experience, he would not be likely to undertake a new enterprise without a serious attempt to estimate accurately his probable profit. The boy would be subjected

to the prevailing economic conditions under which the home farm must yield a profit, or a loss, at the end of each year of work.

The method by which a boy becomes on a small scale a farmer or a business man for himself gives the project which he is carrying on a reality not otherwise attainable, that heightens measurably his interest in the work and in the related study of the school, and must fix better than by any other device the training which he is receiving.

Incidentally, it may be remarked that, as a matter of public spirit, the citizens of the community may do much to further the objects of the school by admitting the agricultural instructor or supervisor and his students to their premises, for the examination of animals, machines, and all out-door and in-door operations, and by explanation and discussion of their methods of accounting and their improved farming processes. At another point in this discussion the possible fields of usefulness to a community of such an instructor or supervisor are pointed out.

2. *The school and its supervisor.*—Part-time work in agriculture, whether the school be large or small, requires the services of a trained and experienced agriculturist, who devotes his entire time to teaching the principles and the best methods of farming. It is believed, further, that largely through this instructor or supervisor of agriculture the school should: (a) choose the projects to be undertaken by the boy; (b) direct his work in the discharge of his projects; and (c) put him in possession of the principles that relate to them.

(a) *In the selection of the projects to be undertaken by the boy*, the instructor should take into consideration:

- A. What farming enterprises are profitable, or could be made so, in the neighborhood.
- B. The age of the boy.
- C. The kinds of projects that would be feasible on the home farm.
- D. The boy's routine farm work at home.
- E. The assistance that the father could afford to give in materials and equipment.
- F. The suitability of the project to the season of the year.
- G. The projects and portions of projects that could best be carried out at the school, and the best time on the program of the year for these parts of the work to be done.

The problem of the building of a poultry house by the boy would be one of the possible minor projects, as before shown, when the larger

project of keeping a pen of poultry was under consideration. This problem would naturally involve such questions as these:

- A. Would the student have the necessary time?
- B. Could the necessary materials be provided by the parent or student?
- C. How much personal supervision of the actual work of construction would be necessary or advisable on the part of the supervisor?
- D. Would profitable poultry keeping on a given home farm require the improved accommodations which the model poultry house, built by the student, would furnish?
- E. How far would conformity to the standards set up by the school be necessary in determining what would be a model type of poultry house for a given farm?
- F. In what year of the school course should the building of a poultry house be undertaken, in order that the training in poultry keeping might be made most profitable?
- G. What time of the year could the student build a poultry house to best advantage?

The problem of conducting the building of the poultry house as a strictly business enterprise is a project which would naturally involve these questions:

- A. To what extent, if at all, could the boy be required to meet, or be charged with, all cost save his own labor, and be credited with a fair inventory valuation of the completed structure?
- B. If the parent must advance the money or materials, what rate of interest, if any, should be charged the boy?
- C. What method of accounting should be adopted?
- D. Should such records be kept as would enable the cost of this building to be compared with other similar buildings in the neighborhood, as a check upon the business-like character of the boy's working out of this project?

(b) In directing the work of the boy in the discharge of his projects, the school must of necessity, it is believed, undertake the supervision of a portion of his work at home. Supervision of part-time work in agriculture is not an attempt on the part of the school to interfere with the private management of the farms of the parents. Supervision, nevertheless, is a continuous effort by the school to assist, advise, and encourage the students in applying under home conditions, farm methods which have proved successful elsewhere, and thus to cause the practical training of the students to result in vocational efficiency.

The instructor would not undertake to supervise all the details of the farm management on any given farm. Daily supervision would be impossible, because of the number of farms to which the work of the school must be extended. Excessive attention to minute details of farm work on the part of the instructor might create needless friction between himself and the parent, or might interfere materially with the supervision of a proper amount of project work. It is, therefore, not contemplated.

The school should not, it is believed, undertake to shift responsibility for the economic management of a farm from the shoulders of the parent to the shoulders of the public.

The instructor would undertake to supervise certain selected major projects and their related minor projects performed by the boy at home. In a given year and season attention might, for instance, be concentrated upon the project of keeping a pen of poultry. Having given the study related to this project, the instructor would supervise the application of that study. The following examples illustrate what the character of such supervision might be:

- A. In the building of the poultry house, the actual work of putting up the structure might, or might not, be supervised by the instructor. All other elements or phases of the enterprise should be worked out by the student under the direction of the school.
- B. The course in farm shop work of the school might well undertake to deal with the problem of the actual construction of the poultry house.
- C. It would be the duty of the instructor or supervisor to canvass thoroughly with the student the relative merits of different types and methods of poultry keeping, from the points of view before indicated. His supervision might go the extent of passing judgment on any proposed purchase of breeding stock, chicks, or eggs.
- D. The supervisor would not personally direct the daily routine work of feeding and watering poultry. His duties would consist of directing the thorough study of possible feeds and mixtures, their comparative cost and availability, and their suitability to the age, condition, and purpose of the student's particular birds. For such supervision personal knowledge by the instructor of the exact home conditions would be necessary.

The supervision of the practical home work of the boy or girl would naturally follow the settlement of such problems as these:

- A. How could supervision and instruction be closely correlated?
- B. How should the time of the instructor and of the pupil be apportioned between home and school duties.

- C. What would be the maximum radius, from the school building as a center, of effective supervision?
- D. What methods might be employed for securing and holding the co-operation of the parent and the community?
- E. By what means might satisfactory standards in the practical work of the student be maintained?

Thus far we have discussed the duties and responsibilities of the special instructor or supervisor of agriculture *in the field of direction* of the boy's projects on the home farm.

The instructor might undertake to give help to others than those connected with his school. There are not wanting those who believe that such an agricultural instructor attached to a regular high school might render valuable service to the community in which he was employed, in what might be termed *the field of suggestion*. Considering the previous training and experience required of this instructor, he should be a man well prepared to be of wide assistance in a farming community as an adviser in emergencies which called for special knowledge and skill. If met by a problem with which he could not cope unaided—and there might be many such problems—he would know the best men, books, and bulletins, or where to find them, for consultation in such emergencies. Such problems might arise from attacks upon crops by injurious insects or by fungous diseases.

The friendly advice which the agricultural instructor might give need not mean a meddlesome attitude on his part. His suggestions would not be given save when requested, or when it was evident that they would be welcome.

The field of suggestion would naturally begin with farms represented in the school by students. The instructor would of course stand ready to give the parents any advice of which he might be capable, or to get for them, or instruct them how to get, any information which they might need or desire. With the gradual extension of his knowledge to the other farms of the community, he might be expected to stand ready in a similar manner to be of assistance to the owners of those farms. Such service, however, would be incidental. His main work would be with the boys enrolled in his classes.

3. *The boy and his projects* form a natural connecting link between the farmer and his farm, on one hand, and the school and its instructor, on the other. At the farm, the pupil deals with the practical aspects of

his projects; and at the school, with their scientific aspects. The foregoing discussion has been devoted chiefly to the practical aspects of the proposed project method of instruction. The present section lays strongest emphasis on the related study essential for the successful carrying out of a particular project.

Details of a project suitable for third- or fourth-year instruction.—Earlier in this paper a project was dealt with which might, for the most part, be successfully carried out by a first- or second-year student. For the present discussion a project has been selected which would require considerable maturity of age, strength, and training for its successful accomplishment. It is true that simpler problems in potato growing have been successfully carried out by elementary school pupils; but even a glance over the elements which enter into the project now to be outlined will show that problems altogether too serious to be comprehended or undertaken by the younger pupil are here involved.

It is to be understood, of course, that the following project is but one of many which might be selected.

(a) *Major project.*—It is assumed that the boy has chosen for his major project the development of a method for increasing the profit from the potato crop customarily grown on the home farm. It is further assumed that 5 acres of potatoes are generally grown; that this year the crop is to be grown on clover sod; that the variety of potatoes to be grown has been chosen by the father; and that the boy's father is willing that his boy shall have complete control of a given number of rows of the 5-acre field, and shall be furnished the necessary tools and materials for his project.

(b) *Minor projects* necessary for carrying out the above major project might then be as follows:

A. *Insuring the most abundant crop by:*

1. *A proper seed bed.*—The related study here would involve knowledge of:
 - (a) Conditions of soil, air, texture, temperature, and moisture most favorable to the growth of the potato plant, including methods of reducing an undesirable amount of "free" water, of avoiding too great dilution of plant food, and of securing a desirable amount of "film" water.
 - (b) Methods of preparing the seed bed, including the comparative advantages of fall and spring plowing, and the best treatment of the land in the spring after plowing and prior to planting.

2. *Proper fertilizing.*—The related study here would include knowledge of:
 - (a) Chemical composition of the potato plant, its osmotic and digestive processes, and the quantity of available fertilizing materials it is capable of assimilating.
 - (b) Complete fertilizers for the production of potatoes, including analyses of standard fertilizers, and the plant-food values for potato growing of chemicals and mixtures offered for purchase.
 - (c) Comparative desirability of muriate and sulphate of potash for producing a crop to be disposed of in an immature state as new potatoes, or for producing a crop of late potatoes to be disposed of for winter use; and the extent to which the “mealy” character of the mature crop should be the determining factor in choosing between these two kinds of potash.
 - (d) Clover sod as a factor in determining the proportion of nitrogen to be supplied.
 - (e) Best formula for a complete fertilizer for this particular crop, taking into account the potato plant, the previous crops and their fertilizer treatment in the system of crop rotation followed on the home farm, the present soil conditions, and the purpose of the crop.
 - (f) Most liberal amount of fertilizer warranted for use in growing this particular crop, in view of the known condition of the land and the assimilative powers of the potato plant; and the saving in cost by home mixing of the supply to be used.
3. *Using the best seed.*—The related study here would include knowledge of:
 - (a) Botanical characteristics of the potato plant; the difference between a seed and a tuber; and potato improvement by various methods and conditions of propagation, taking into account tendencies of the potato plant to “variation” and to “mixing in the hill.”
 - (b) Importance of planting “seed” selected in the field from the best-yielding hills, rather than seed selected from the bin merely by size of tubers.
 - (c) Advantage of using potatoes for planting which have been properly stored, and the effects of freezing and sprouting in the cellar.
 - (d) Conditions under which it may be desirable to sprout potatoes to be used for planting, in a warm, well-lighted room—the temperature, the time, and the care in handling required for such sprouting.
 - (e) Size of piece and number of eyes to the piece, as important factors in starting the crop and in the quantity of its yield.
4. *Proper planting.*—The related study here would include knowledge of:—
 - (a) Botanical and chemical characteristics of the potato plant, as to

its feeding habits, the growth of the tubers, and the effect on the tubers as food products of exposure to the sun during their growth.

- (b) Distances between rows, and between seed pieces in the row.
 - (c) Depth of planting, in its relation to protection of the tubers from the sun, shielding the crop from possible rot-producing bacteria and spores, and subsequent cultivation, whether by the "level" or by the "hill" method.
 - (d) Best time for planting, whether for "early" or for "late" potatoes.
5. *Proper spraying.*—The related study here would include knowledge of:
- (a) Botanical characteristics of the potato plant, particularly the relation of health and luxuriance of foliage to tuber production.
 - (b) Insect enemies of the potato plant, and their entomological characteristics, such as their methods of propagation and their feeding habits.
 - (c) Depredations of insects, and their possible relation to attacks upon the potato plant by plant diseases.
 - (d) Paris green: its chemical composition; its protective action against the insect enemies of the potato plant; dangers attendant upon its use; its possible combination with Bordeaux mixture; and the best formula, method of preparation, and periods for its application.
6. *Proper cultivation.*—The related study here would include knowledge of:
- (a) Physical characteristics of the soil, particularly the capillary movement of water to the surface of the soil, and exhaustion of soil moisture by evaporation.
 - (b) Surface conditions most favorable for receiving rain water without washing, puddling, or subsequent baking.
 - (c) Value of a "soil mulch," and the most desirable method and frequency of cultivation for maintaining such a mulch.
 - (d) Comparative cost and advantages of "level" and "hill" cultivation, and reasons for the choice of the particular method to be followed in cultivating the present crop.

B. Insuring the cleanest crop by:

1. *Dipping the "seed" potatoes* in a formalin solution. The related study here would involve knowledge of:
- (a) Plant parasites which produce "scabby" potatoes, and the biological conditions favorable and antagonistic to their growth.
 - (b) Formalin solution: its chemical constitution; its chemical action on these damaging potato parasites; and the proper formula and method for its use in protecting the potato crop.

2. *Substitution of chemical fertilizers* for barnyard manure. The related study here would involve knowledge of:
 - (a) Dangers of infection from the use of barnyard manure.
 - (b) Dangers of infection, if any, from the use of chemical fertilizers.
- C. *Insuring the soundest crop by spraying* the potato plants with Bordeaux mixture. The related study here would involve knowledge of:
 - (a) Bacterial and fungous diseases to which the potato plant is subject; evidences of their presence; and whether or not they are preventable.
 - (b) Bordeaux mixture: its chemical composition; its protective action against potato-plant diseases; and the best formula, method of preparation, and periods of application for its use.
- D. *Other minor projects* would include the most profitable means and methods of harvesting, storing, and marketing the crop. And other studies related to these projects would include knowledge of potato implements and machines and their use; the comparative advantages of field pit and cellar for storage; principles and means of ventilation, and the temperature at which potatoes should be kept; near and more distant markets, and comparative transportation cost; prices and the probable tendency of prices, in view of the press and government reports of the potato crop for the state, the country, and the world.

General observations on related study.—The study related to the work of carrying out this potato project embraces, therefore, important matter from several sciences, including botany, chemistry, physics, entomology, bacteriology, and plant pathology. For the calculations, mathematics would be necessary; for keeping the accounts, bookkeeping would be required; for correct correspondence, there should be training in business English; consideration of transportation, markets, and world-production would involve knowledge of commercial and agricultural geography.

The project method of instruction on the side of related study, thus, it will be evident, must insure that the boy, in carrying out his projects, shall pass through a thoroughgoing educational process.

Good citizenship.—It is proposed, furthermore, that the division of time, in carrying out the school and home farm co-operative method of training, shall be about as follows: for the execution of the projects, including work during vacations and other out-of-school hours, 50 per cent; and for the related study, 30 per cent. The remaining 20 per cent of the time of the boy is expected to be used for general culture and good citizenship instruction, wherein systematic courses may be

provided in such subjects as English, history, civics, current events, mathematics, and science.

AGRICULTURAL INSTRUCTOR AND HOME WORK SUPERVISION

In order to carry out the project method in agricultural part-time work, it has been shown that it is necessary to employ at least one instructor throughout the summer for supervision of the home-farm enterprises of the pupils. And it is evident that such an instructor must possess special qualifications for this work, in preparation, experience, and personality.

He should be a graduate of an agricultural college.—His preparation should include graduation from an agricultural college or its equivalent. He should be familiar with and keep in touch with the officers and the work of the agricultural college and experiment station of the state in which he serves and he should keep in touch with the experiment stations in other states where work is being done under conditions similar to those in his state.

He should be familiar with the work of the United States Department of Agriculture, so far as it is applicable to his state. He should be capable of keeping in touch with new literature in pamphlet, periodical, and book form, as it is issued, and to the extent that it may be applicable to his locality. He should be familiar with the work of organizations concerned with rural progress in his state, and capable of heartily co-operating with their officers.

His experience.—Preferably, such a person undertaking to prepare for agricultural teaching, in Massachusetts for example, should have been reared on a Massachusetts farm, or on a farm where the agricultural operations would yield experience of value for work in this state. He must be a master of farming as a handicraft and amply able to demonstrate the things which he undertakes to teach; and he should be familiar with, and be able to demonstrate the use of, the kinds of farm machinery which can be economically used on farms of his locality.

His personality.—Since he must teach, such an instructor or supervisor must be effective in discipline; that is to say, in the handling of boys. He must be prepared to meet people in his community pleasantly, and establish agreeable working relations with them. He must be prepared to maintain harmonious relations with his fellow-teachers,

and be amenable to the authority of the officers responsible for the school which he serves.

His school year should provide for service during the spring, summer, and fall months, giving him a vacation during the winter months; rather than for service during the fall, winter, and spring, with summer months for vacation purposes. Such a program would insure his services throughout the growing and harvesting seasons; and, by allowing him time for proper professional improvement through winter study at the state agricultural college, and through further observation and experience on intensive commercial plants, such as those devoted to poultry, certified milk, and greenhouse and hot-bed production of vegetables, cut flowers, and foliage plants, should make him permanently and increasingly useful.

His absence during winter months would not seriously disturb the curriculum of the school; on the contrary, it would make room for the teaching of related subjects, including manual-training projects related to the farm, by other members of the staff to the lower classes; it might also enable the higher classes to take winter short courses at the agricultural college, and thus make them acquainted with men engaged in research and experimental work.

The salary of such a supervisor is an important consideration. Experience seems to show that, in order to command the services of a man having the technical training, practical experience and personality called for in the above discussion of the necessary qualifications of a successful supervisor, salaries ranging from \$1,200 upward must be paid. One such instructor in Massachusetts was started at \$1,500 and will be advanced \$100 a year to \$2,000, if his work continues to give satisfaction.

The problem of necessary salaries is an economic one at bottom.—In order to attract to the work a supervisor of the type herein described, it will be necessary to make the compensation which he is to receive as good as, or better than, that which is offered to him in competing lines of work.

CONCLUSION

It is believed that home farm work, supervised by the school, where conditions are at all like those in Massachusetts, might well be substituted as far as possible for the present methods of much work, little work, or no work at all of a *productive and managerial* nature, now

found in connection with vocational agricultural school training; and that the project method of bringing agricultural science immediately to bear on actual farm practice, in going commercial agricultural enterprises conducted by the boys themselves, is a promising solution of our most pressing problem in this field of vocational training.

The Smith's Agricultural School at Northampton, Massachusetts, beginning with the school year 1908-9, has employed a man for the express purpose of assisting the boys throughout the summer in applying the teachings of the school in their home farm work. This method immediately appeals to the motor instincts and activities of boys of secondary school age. The success of boys in the corn-growing clubs in many states shows that boys instantly respond to help at home.

A school boy of sixteen at the recent Massachusetts Corn Show won the sweepstakes against all comers, including the sweepstakes winner of last year at the big New England Corn Show, for the best single ear of corn and also for the best collection of ten ears. He had been given seed by the former winner, and had been told and shown out of school hours what to do, and when and how to do it on his father's land. Most boys, like most men, learn best by being told and shown on the field of action.

This method offers the boy, all too eager to quit school for work on reaching his fourteenth birthday, a strong incentive to continue in school; because it bids fair to make him *an earner while still a learner*. Boys like to feel that as members of the family they are at last able to pay their own way.

In short, it is believed that the vocational education for farming outlined in the above discussion, and embodying the project and part-time work method, will justify itself from every reasonable point of view, and that the school, or system of schools which adopts it and works it out patiently and persistently will find that it possesses undeniable merit as a method of training not only for farming as a definite calling, but also for intelligent and vigorous participation in the community life of any commonwealth.

III. STATE-AIDED DEPARTMENTS OF AGRICULTURE IN PUBLIC HIGH SCHOOLS

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Eleven states have appropriated funds to encourage the teaching of agriculture in existing public high schools. Several other states have made provision for special agricultural schools or given money for conducting teachers' training courses in which agriculture is one of the subjects of instruction, but these are not considered in this paper.

Virginia was first of the eleven states to make a specific appropriation for the teaching of agriculture in public high schools. In 1908 the Virginia Assembly appropriated \$20,000 to enable the State Board of Education to inaugurate courses in agriculture, home economics, and manual training in at least one public high school in each of the ten congressional districts of the state, and has since increased the appropriation to \$65,000, including \$25,000 to aid the schools in providing buildings and equipment, and \$10,000 for extension work to be conducted by them. There is nothing in the legislation to indicate how much money each school shall receive, because the number of schools to be aided, and hence the amount available for each, is not stipulated, this whole matter being left to the discretion of the State Board of Education.

Virginia was followed in 1909 by Maine and Minnesota. At that time Maine gave funds for instruction in agriculture and other industrial subjects in incorporated academies, but two years later an act was passed extending such aid to free high schools—two-thirds of the total expenditure for instruction in agriculture, home economics, and mechanic arts, but not to exceed \$500 a year to any one school.

Minnesota passed an act giving \$2,500 to each of ten high, graded, or consolidated rural schools maintaining courses in agriculture, home economics, and manual training, and the work of these ten schools proved to be so popular that in 1911 the legislature extended state aid at the rate of \$2,500 a year to twenty additional schools, and also passed another act giving \$1,000 a year to each of fifty schools to aid in main-

taining courses in agriculture and either in home economics or manual training.

In 1910, Louisiana, Maryland, and New York passed somewhat similar laws, and in 1911, Kansas, Massachusetts, North Dakota, Texas, and Wisconsin were added to the list. That local school authorities are ready and willing to meet all reasonable requirements as to expenditures for equipping and maintaining departments of agriculture, home economics, and farm mechanics in order to secure state aid, is shown by the rapid growth in the number of such state-aided departments. In May, 1910, there were twenty-eight schools receiving state aid for agriculture, while in November, 1911, there were at least two hundred and fifty.

The character and amount of state aid and the requirements to be met in the different states are shown in the following brief statements.

KANSAS

Law—Session Laws of 1911, chap. 24, sec. 2.

Number and kind of schools aided—Any high school maintaining a normal-training course under the provision of chap. 212 of the Session Laws of 1909. The State Board of Education has approved 98 schools for 1912.

Character and amount of aid—"The sum of \$250 per annum," the total state appropriation for this purpose being \$25,000 for 1912, and \$25,000 for 1913.

For what purpose—The maintenance of "courses in the elements of agriculture and domestic science."

Requirements to be met—At least ten pupils must be "enrolled in such industrial courses each semester." The State Board of Education has agreed that teachers in either of these courses must have special training for their work and their qualifications must be approved by the State Superintendent of Public Instruction. A minimum of 1 year in agriculture and 1 year in domestic science, preferably in the second year, will be required. "Laboratory work shall require double periods."

Administered by—The State Board of Education.

LOUISIANA

Law—Acts of Louisiana, 1910, No. 80, making appropriations to defray the ordinary expenses of the government, etc.

Number and kind of schools aided—Not more than 20 high schools maintaining agricultural departments in the school years 1911 and 1912.

Character and amount of aid—A lump sum appropriation for the year ending June 30, 1911, \$25,000, and for the year ending June 30, 1912, \$25,000.

Since the State Board of Education has decided not to aid more than 20 schools in 1911 and 1912, the appropriation to each school will be from \$1,200 to \$1,500. Nine schools maintained departments of agriculture in 1909-10 without state aid.

For what purpose—The maintenance of agricultural departments in connection with public high schools.

Requirements to be met—The State Board of Education has adopted regulations making the following requirements: Each school must have a demonstration farm of at least 5 acres, fenced against rabbits, chickens, and stock, and an option on 5 acres more if needed; there must be a barn with at least 5 stalls for horses and cattle, a weevil-proof grain bin, fertilizer and tool rooms, and a hayloft; the agricultural departments of approved high schools shall have at least \$100 worth of apparatus for teaching agriculture in addition to the regular apparatus for such schools, and those not on the approved list must have \$100 worth of apparatus for agriculture and from \$75 to \$150 worth of other apparatus; the school must also have at least \$40 worth of tools and \$140 worth of farm implements; an appropriation of at least \$250 for maintenance annually; and must own a horse or mule. The teacher of agriculture must be a graduate of an agricultural college with some practical experience in farming, and must be satisfactory to the department of education; he cannot be principal of the school and must not be required to teach any class in the school outside the department of agriculture except in botany and zoölogy, if these subjects are given an agricultural trend; he must be employed for twelve months in the year.

Administered by—The State Board of Education through the Supervisor of Agricultural High Schools.

MAINE

Law—Act of 1909 providing state aid for instruction in agriculture and other industrial subjects in incorporated academies, superseded by "An Act for the Encouragement of Industrial Education," Public Laws of 1911, chap. 188.

Number and kind of schools aided—Any free high school or incorporated academy.

Character and amount of aid—"A sum equal to two-thirds the total expenditure for instruction in each of said courses, provided, however, that no school shall receive a total in excess of \$500 in any one year for the support of said courses."

For what purpose—Instruction in the "principles of agriculture and the domestic and mechanic arts."

Requirements to be met—An average attendance of not less than 12 students in any course for which state aid is claimed. The course of study, equipment,

and qualifications of instructors to be prescribed by the State Superintendent of Public Instruction.

Administered by—The State Superintendent of Public Instruction, except that the funds are paid out upon order of the Governor and Council.

MARYLAND

Law—Acts of 1910, chap. 386.

Number and kind of schools aided—Any high school of the first or second group. High schools of the first group must have not less than 80 pupils, 4 teachers of high-school subjects, exclusive of teachers of special subjects, a course of four years of 36 weeks each, and provision for manual-training and domestic-science courses and also for a commercial or an agricultural course. High schools of the second group must have at least 35 pupils, 2 teachers of regular subjects, a three-year course, and a manual-training (construed to include domestic science), or an agricultural, or a commercial course.

Character and amount of aid—In addition to state aid for the salaries of the principal and regular teachers, schools of the first group receive from the state "\$400 on account of each of 2 special teachers, who shall spend at least two-fifths of their time in the school receiving said amounts, and schools of the second group \$400 on account of 1 teacher of special subjects, provided that if an instructor in manual training or agricultural work be required to divide his or her time among not more than four schools of this group, \$150 shall be allowed on account of each of such schools."

For what purpose—Instruction in manual training and domestic science and commercial or agricultural subjects.

Requirements to be met—So far as agriculture is concerned high schools of the first group must conform to a four-year course of study prescribed by the State Board of Education, requiring a minimum of two recitations of 40 minutes each and one practicum of 80 minutes each week.

Administered by—The State Board of Education.

MASSACHUSETTS

Law—"An Act to Codify and Amend the Laws Relating to State-aided Vocational Education," approved May 26, 1911.

Number and kind of schools aided—Public high schools.

Character and amount of aid—Two-thirds of the salary paid to instructors in agriculture, provided that the total state expenditure for this purpose shall not exceed \$10,000 in any one year.

For what purpose—The maintenance by cities and towns of "local or district independent agricultural schools consisting only of agricultural departments in high schools."

Requirements to be met—Approval by the State Board of Education “as to organization, control, location, equipment, courses of study, qualifications of teachers, methods of instruction, conditions of admission, employment of pupils, and expenditures of money.”

Administered by—The State Board of Education.

MINNESOTA

Putnam Act

Law—“An Act to Amend Chapter 247, General Laws 1909, Entitled, ‘An Act to Provide for the Establishment and Maintenance of Departments of Agriculture, Manual Training, and Domestic Economy in State High, Graded, and Consolidated Schools, and to Authorize Rural Schools to Become Associated with Such State, Grade, or High Schools, and Making Appropriation Therefor,’ and to Provide for Levying of Taxes to Carry Its Provisions Into Effect,” approved April 5, 1911.

Number and kind of schools aided—Any high school, graded school, or consolidated rural school having satisfactory rooms, equipment, and location, limited, however, by a state appropriation for 30 such schools for the years ending June 30, 1912, and June 30, 1913.

Character and amount of aid—Not exceeding \$2,500 a year on account of the maintenance of an agricultural and industrial department, and \$150 a year for each rural school associating itself with a Putnam school.

For what purpose—The maintenance of an agricultural and industrial department to consist of courses in agriculture, manual training, and home economics.

Requirements to be met—The employment of trained instructors whose qualifications are approved by the State High-School Board, and provision for a tract of land suitable for school garden and purposes of experiment and demonstration containing not less than 5 acres. “The instruction in such agricultural and industrial department shall be of a practical character, dealing with soils, crops, fertilizers, drainage, farm machinery, farm buildings, breeds of live stock, live-stock judging, animal diseases and remedies, production of milk and cream, testing of same, manufacture of butter and cheese, horticulture, gardening, plants, and such other questions as have a direct relation to the business of farming, including book-keeping and farm accounts. It shall also include systematic courses in manual training, and in home economics, as these are usually taught in public schools.”

Administered by—The State Department of Public Instruction through the State High-School Board.

Benson-Lee Act

Law—"An Act to Provide for the Teaching of Certain Industrial Subjects in High and Graded Schools, and Fixing the Amount of State Aid for Such Instruction, and the Manner of Its Payment," approved April 7, 1911.

Number and kind of schools aided—Any high school or graded school, the number being limited by a state appropriation for 50 such schools in 1912 and 1913.

Character and amount of aid—One thousand dollars annually.

For what purpose—The maintenance of a course in agriculture and either in home economics or in manual training.

Requirements to be met—The State High-School Board has prescribed rules requiring that the courses authorized by this law shall be maintained throughout the school year, and that in addition to the longer course each school shall offer a free winter short course of not less than 3 months. The instructors shall have had training in their respective lines in technical schools, those in agriculture being graduates of an agricultural college or having an equivalent technical training. Suitable rooms and equipment shall be provided, and the instructor in agriculture shall have a room exclusively for his work, shall be provided with laboratory facilities, and shall have not less than a continuous half-day for agricultural work. He shall make a close study of local conditions, and attend markets, horticultural meetings, meetings of creamery and stock-breeding and other associations, and such other gatherings as afford opportunity to make the acquaintance of farmers. The work in agriculture is to include textbook work, laboratory courses, special work along some line of local interest, such as dairying, corn breeding, poultry, etc., institute work in co-operation with the extension division of the State College of Agriculture, and a winter short course. Two satisfactory daily periods in an industrial subject or subjects are held to count as a credit.

Administered by—The State Department of Public Instruction through the State High-School Board.

NEW YORK

Law—Education Law 1910, art. 22.

Number and kind of schools aided—Any city school or union free school.

Character and amount of aid—The sum of \$500 to each city and union free school for each independently organized school (here meaning nearly the same as "department" or "course" in other states) "of agriculture, mechanic arts, and home-making, maintained therein for 38 weeks during the school year and employing one teacher whose work is devoted exclusively to such school, and having an enrolment of at least 25 pupils and maintaining a course of study approved by him," and the further sum of \$200 for each additional

teacher thus employed. "The Commissioner of Education may in his discretion apportion to a district or city maintaining such schools or employing such teachers for a shorter time than 38 weeks, an amount pro rata to the time such schools are maintained or such teachers are employed."

For what purpose—To be used exclusively for the support and maintenance of schools of agriculture, mechanic arts, and home-making, independently organized but forming a part of the public-school system.

Requirements to be met—The school or course in agriculture, mechanic arts, and home-making must be maintained 38 weeks to secure in full the benefits of this act, must have an enrolment of at least 25 pupils, employ a teacher or teachers "holding a special agricultural-school certificate and devoting their entire time to the teaching of agriculture, mechanic arts, cooking, sewing, bookwork relating to agriculture, etc.," and must conduct a course of study approved by the State Department of Education. The State Department announces that "classes of book study only in agriculture and home-making are not entitled to the benefits of the law establishing these courses," and recommends that the "practical phases of work in these courses should extend through at least one-third of the weekly program, and more if school conditions permit."

Administered by—The New York State Education Department through its division of trade schools.

NORTH DAKOTA

Law—Laws of 1911, chap. 40, approved March 18, 1911.

Number and kind of schools aided—Any state high school, graded, or consolidated rural school having facilities to do agricultural work, the number being limited to 5 the first year, and an additional number of not more than 5 every two years thereafter. Owing to a veto by the Governor of the appropriation to carry out the provisions of this act for 1912, there will be no funds for these schools until 1913.

Character and amount of aid—Each school will be entitled to \$2,500 a year of state aid but will not participate in the state aid now being given to the state high schools—\$600 to \$800 a year.

For what purpose—The maintenance of an agricultural department.

Requirements to be met—The employment of trained instructors in agriculture, manual training, and domestic science, provision for a tract of land suitable for a school garden and purposes of demonstration containing not less than 10 acres, and located within one mile of the school building, the maintenance of special winter courses when necessary to accommodate a reasonable number of boys and girls, and the giving of instruction in soils, crops, fertilizers, drainage, farm machinery, farm buildings, breeds of live stock, stock judging,

animal diseases and remedies, production, testing and hauling of milk and cream, the manufacture of butter and cheese, the growth of fruit and berries, management of orchards, market garden and vegetable crops, cereal grains, fine seeds, bookkeeping and farm accounts, and all other matters pertaining to general practice.

Administered by—The State High-School Board.

TEXAS

Law—Acts of Thirty-second Legislature, chap. 26, sec. 3, approved March 6, 1911, became a law June 11, 1911.

Number and kind of schools aided—Any high school of the first, second, or third class. A high school of the first class is one which maintains at least four years of work above the sixth grade and employs at least two teachers of high-school subjects; a high school of the second class, three years and two teachers; and a high school of the third class, two years and one teacher.

Character and amount of aid—In high schools of the first and second class the state will duplicate local appropriations within the following limits: agriculture, \$500 to \$1,500; domestic economy, \$500 to \$1,000; and manual training, \$500 to \$1,000. In high schools of the third class state aid is confined to courses in agriculture, \$500 to \$1,000. No school may receive in one year more than \$2,000 from the state, and "such appropriation shall not be made more than twice to the same school." Fifty thousand dollars a year has been appropriated to meet the requirements of this law in 1912 and 1913.

For what purpose—Establishing, equipping, and maintaining courses in agriculture, domestic economy, and manual training.

Requirements to be met—The local board shall provide ample room and laboratories for teaching each subject and, in connection with the department of agriculture, shall provide a tract of land suitable to the production of farm and garden plants, and shall employ a teacher who has received special training for giving efficient instruction in agriculture. The State Superintendent of Public Instruction has decided upon a minimum of 3 acres of land suitable for agricultural purposes to be owned by each school applying for state aid for agriculture.

Administered by—The State Board of Education.

Grants of aid are made, upon recommendation of the State Superintendent of Public Instruction, only to those schools which give evidence that after state aid is withdrawn they will continue to maintain the special departments.

VIRGINIA

Law—Item in appropriation bill of 1908-9 and acts of 1910, p. 362.

Number and kind of schools aided—At least one public high school in each

congressional district (10 in number) in the state. There are 10 of these schools now in operation.

Character and amount of aid—In the appropriation bill \$20,000 a year was given for apportionment among these schools. By the act of 1910 the amount was increased to \$30,000 annually, and for the year ending February 28, 1912, the further sums of \$25,000 for the purpose of providing buildings and equipment for these schools, and \$10,000 for "traveling, demonstration, and extension work to be connected" with them.

For what purpose—Maintaining "a thorough course in agriculture, the domestic arts and sciences, and manual training, . . . and at least one-fourth of the school time shall be devoted to these subjects." All female students attending these schools shall be instructed in domestic sciences and arts as required subjects and may also elect agriculture. These schools may also be used as centers for directing farm demonstration work and other extension work throughout the several congressional districts, under regulations prescribed by the State Board of Education and the State College of Agriculture.

Requirements to be met—Not less than 5 acres of land convenient to the school to be cultivated by the students, as far as practicable, for demonstration purposes. Suitable buildings and equipment, including shops for elementary manual training, benchwork, and other forms of shopwork applicable to rural life. The district boards shall provide suitable equipment for domestic-science instruction.

Administered by—The State Board of Education.

By the acts of 1910 the boards of supervisors in the several counties of the state are authorized to appropriate such sums of money as to them may seem proper for the establishment, equipment, or maintenance of the schools referred to above.

WISCONSIN

Law—Laws of 1911, chaps. 544, 545.

Number and kind of schools aided—Any "free high school or a high school having a course of study equivalent" thereto.

Character and amount of aid—State aid amounting to \$250 for each special department maintained only in the high-school years, or \$350 for each such department maintained in the high school and "the three upper grades next below the high school." The maximum that any school can receive is \$1,050 a year.

For what purpose—To establish and maintain departments of manual training, domestic economy, and agriculture.

Requirements to be met—The carrying out of a course of study or outline of work in manual training, domestic economy, or agriculture, approved by the State Superintendent of Public Instruction, and the employment of qualified

teachers, whose salaries "shall be at least at the rate of \$60 per month." A course of study involving 4 units in agriculture and agricultural chemistry has been outlined, together with suggestions concerning apparatus, equipment, and supplies, which outline has been approved by the State Superintendent of Public Instruction and published as a bulletin of the University of Wisconsin.

Administered by—The State Superintendent of Public Instruction.

From these statements it will be seen that state aid varies in the different states from \$250 to \$3,000 to each school, that the number of schools receiving state aid is usually limited by the size of a lump sum appropriation, and this appropriation varies from \$10,000 in Massachusetts to \$125,000 in Minnesota.

Louisiana and Massachusetts give state aid for agriculture alone, Kansas for agriculture and home economics, while the other eight states include agriculture, home economics, and manual training or farm mechanics. The requirements to be met as to equipment and local expenditures are in the case of eight of the states partially included in the legislative enactments but in Louisiana, Maryland, and Massachusetts practically all requirements are prescribed by the state authorities designated to administer the laws. These state authorities are in every case members of the state board of education, or, as in Louisiana, Massachusetts, and New York, special officers appointed by the state board of education. In Louisiana the special officer in charge of agricultural courses in high schools is also an officer of the state agricultural college. In New York this officer is a member of the staff of the state department of education and he has charge of the corps of district supervisors of elementary schools who are appointed as the result of civil-service examinations and are required to give special attention to nature-study and elementary agriculture in the schools under their supervision.

The requirements to be met by the schools receiving state aid vary greatly in the different states, but in the main they include the employment of teachers having special training for their work, provision for suitable laboratories and laboratory equipment, land for educational work in agriculture, and the giving of courses of study approved by the state authorities in charge.

ADVANTAGES OF A SYSTEM OF STATE AID FOR AGRICULTURAL AND INDUSTRIAL SUBJECTS

As a system for the development of agricultural and industrial education, state aid possesses many advantages over any system depending solely upon local initiative. In the first place it usually insures better

equipment. These are primarily laboratory rather than textbook subjects, and adequate equipment is essential to success in teaching them. Laboratories, special apparatus, and land are needed, and these are much more likely to be provided if state aid depends upon them than under a system depending entirely upon local initiative for development.

Secondly, state aid carries with it a certain amount of state supervision, and this can more easily be made expert supervision than where everything concerning courses of study and methods of teaching are left to town or county superintendents. Three of the states have already employed experts to supervise the work in agriculture in state-aided schools, and at least one other state would employ a supervisor at once if the right man could be found. The lack of expert supervision is quite generally recognized as one of the greatest weaknesses of our public-school systems, and anything that will help to overcome this weakness should be actively promoted.

And finally, state aid will greatly stimulate the introduction of agriculture, home economics, and farm mechanics into our public high schools, and contribute materially to the success and permanence of this work. This will be accomplished because higher salaries will be paid and better teachers will be secured and retained. With the present demand for teachers of agriculture it is almost impossible for an unaided high school to secure an agricultural-college graduate and keep him for more than one year. Competent teachers of agriculture command higher salaries than those in any other high-school subject. One of the state-aided schools last year paid its teacher of agriculture \$1,400 and its principal \$950. It is not uncommon for agricultural-college graduates to get \$1,200 to \$1,500 the first year out of college, and in fact the average salary of 95 such graduates in 1910 who accepted positions as teachers or investigators was \$1,017. Very few unaided high schools would feel able to employ special teachers at such salaries.

But if agriculture is to be taught in public high schools, it is highly important that good teachers, well trained technically, be employed and retained year after year. There are numerous examples of high schools that have developed excellent work in agriculture, helpful alike to the pupils and to the farmers of the community, only to have it deteriorate greatly or lapse entirely with the loss of the teacher responsible for developing it. State aid would tend, and is now tending, to overcome this difficulty by making higher salaries available and by creating a

permanent general policy with reference to the development of high-school instruction in agriculture. Agricultural-college graduates are more willing to accept high-school positions in states committed to such a policy. The building up of a well-paid and stable teaching profession is a matter of the utmost importance in this country, and if the appropriation of a few thousand dollars a year by state legislatures will contribute to this end and at the same time help to prepare young men and young women for better service on the farm, in the shop, and in the home, it is well worth trying.

IV. HIGH-SCHOOL AGRICULTURE WITHOUT STATE SUBSIDY

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The public schools of America were created as institutions through which the state could protect itself, and insure its perpetuity by affording means for training the child-mind and thus making each individual more and more intelligent and more and more capable of self-government. In the earlier stages of our history any training beyond the rudiments was not possible in public institutions. Practically all advanced training was secured through the private school, academy, seminary, or college.

As time passed by, these private institutions either passed away because of lack of support or were transformed into preparatory institutions for still more advanced training to be received in a university. When this condition became apparent, the people, realizing the need of opportunities for broader training than the common schools of that time afforded, created the "union" school, which later became the modern high school. The high school was authorized by law, and its support made obligatory upon the people in the interests of broader education.

The term "broader education" in this instance meant instruction in the classics, languages, literature, mathematics, and science, and these subjects constitute the traditional course of study, the pursuance of which is supposed to result in education. Various definitions of *education* have been given in the past, and probably no single school has ever measured up to any one definition. If education is to "fit for complete living," or if it is to give one power, we must admit in the first instance that the high-school graduate is not fitted for life, and in the second instance if he has power it is only in the "potential" form.

In order to give the product of the public school real power, or active power, the work of the schoolroom must be attached to the activities of human life through the introduction of such courses as will enable the student, in the process of his training, to apply principles to the actual solution of some of life's problems. In other words, vocational courses will afford an opportunity for such application, and at the same time

enable the student to discover his own aptitudes and develop a real purpose in life before he leaves the public school.

The traditional course of study, as noted above, need not be discarded; in fact, it must not be discarded, but it may be modified. Without any doubt we are spending altogether too much time upon some subjects and in so doing we have excluded others which might become even more valuable than the usual subjects.

During the past fifty years we have been experiencing a period of educational development through successive transitions from one theory of education to another, and in this period of development in educational needs the world of commerce and industry has moved forward by rapid strides. For many years the great struggle in the business world has concerned itself with securing the largest possible utilization of natural resources, and at the same time the highest degree of efficiency. In order to assist in this movement the business world has called upon the educational institutions for extensive researches into the mysteries of natural forces. Scientific schools and universities have been taxed to their limits to meet this demand.

The establishment of colleges of agriculture and mechanic arts grew out of a realizing sense on the part of a few far-sighted business men that the forces of Nature were not being utilized to their limit, and also that we were in great danger of severe losses because the unwise use of these forces was producing deterioration in them. Soil which had once produced profusely was found to be practically worthless. The mineral resources of mother Nature were being exhausted and some means must be provided by which these losses could be made good. It is the special province, then, of our technical institutions to give such training to the human mind as will enable it to utilize wisely natural forces and prevent waste.

It is not the province of this paper to discuss the work of higher institutions of learning, and we therefore proceed to discuss the relation of the high school, this modern institution the doors of which are open to all classes of people, to the great problem of the use and conservation of natural resources.

The high school has been called the "people's college," which statement contains more or less of truth. The work done in this school includes what we call in this country "secondary education." The course of study covers a period of four years which is based upon the completion of the so-called "elementary branches."

The children enter the high school on the average at fourteen years of age, in the midst of the adolescent period. The process of man-making is going on, and for this reason the high-school period has been called the "formative period." The child enters the school generally with no fixed ideas of his future, and with little knowledge of his own personal aptitudes, largely because of the character of his previous training, or lack of training. If it is true that the period from fourteen to eighteen years is the formative period, then it would seem perfectly logical that during such time he should be introduced to the activities of human life; and his true development would consist in relating his knowledge of literature, mathematics, science, and art to the activities in which men and women engage. Probably the greatest function of the high school is to open the door of opportunity before boys and girls and give them somewhat of a vision of their own possibilities.

We have passed the point in educational history when it is particularly necessary to present arguments and reasons why agriculture and other vocational subjects should be taught. It has become perfectly clear that if there is good ground why agriculture should be taught in a collegiate institution there are equally good grounds for its being taught in a secondary institution.

The purpose of this paper is largely to describe what has already been done in agricultural education in those states which do not grant a special subsidy to individual schools for the introduction of such courses. There are various plans of operation, and we must remember that we are at the very beginning of agricultural education so far as it relates to secondary schools. Courses of study have not been thoroughly organized and we have not had time to judge of actual results. We have simply gone far enough to demonstrate the feasibility and the advisability of introducing a course of some kind in agriculture. We shall deal largely with conditions as they exist at the present time in the states of Illinois, Indiana, Michigan, Nebraska, and Ohio, these states not having as yet authorized state subsidy for any special courses in the public schools.

ILLINOIS

In answer to certain inquiries, State Superintendent Blair gives the following information:

"We have no laws requiring the teaching of agriculture in public schools. Something in the way of nature-study and the elements of agriculture has been

attempted in probably 2,000 out of the 11,000 rural schools. We have in this state several kinds of public high schools known as the 'village high school,' the 'city high school,' and the 'township high school,' and we have several hundred such schools. Out of this number probably 25 are presenting some work in agriculture.

"Thus far the teaching of agriculture has been a growing sentiment rather than an accomplished fact. Some county superintendents and able country teachers are making strong efforts to give the children of the country the benefit of such instruction. A few of the schools have seriously taken hold of the matter, and offer as good a course in this subject as in any other of the high-school subjects. We have no special secondary schools of agriculture in this state."

INDIANA

State Superintendent Greathouse writes:

"The teaching of agriculture in the public schools in this state is not required by law. It is encouraged and is taught in probably 2,500 elementary schools and 200 high schools. Teachers are not required to pass an examination in this subject, and in many places the work is not well done. There are no special schools of agriculture of secondary grade in this state."

NEBRASKA

State Superintendent Bishop, writes:

"Some instruction in agriculture is probably given in one-eighth of the rural schools, and in 108 public high schools. The subject of agriculture is presented in the ninth or tenth grades, and consists of a one-year course similar to a course in botany or any other subject which continues through one year, and is presented by means of a textbook. Nebraska has two special schools of agriculture of secondary grade, one recently established."

OHIO

State Superintendent Miller writes:

"Agriculture is taught in all township and village districts. The Board of Education determines in what year or years the course shall be given. At the present time in nearly all of the schools the instruction consists of a one-year course in the ninth or tenth grade, based upon a textbook."

MICHIGAN

In Michigan there is no law requiring the teaching of agriculture in any public school. Some definite instruction is being given in about 800 of the 6,500 rural schools, and regular courses in agriculture have been introduced in 15 high schools. These courses consist of one unit in each of the four high-

school grades, and the work is planned so as to develop a department of agriculture along the same lines that we develop departmental work in other subjects. In addition to these schools there are about 20 others which are giving some instruction in agriculture at some time during the high-school course, mainly by the use of an elementary textbook. In addition to these we have two special county schools of agriculture. These schools are in part supported by the state and are not germane to this discussion.

The subject of agriculture in the 15 high schools is taught in each case by a graduate of an agricultural college; and in several of the other schools where supplemental courses are given the instructors have had some special training in the subject of agriculture. The course of study covers the following subjects: Agricultural botany, horticulture and entomology, farm crops, the types of live stock, breeding and feeding live stock, dairying, soils, and farm management.

It will be seen from the foregoing statements that so far as secondary agriculture in public schools is concerned, we have hardly gone far enough to draw any definite conclusions. Enough has been done, however, to demonstrate certain things. Among these it has been clearly shown in each state that there is an interest on the part of the people in agriculture as a subject of study; second, that agriculture correlates nicely with other science subjects; third, that we can develop intellectual power through it; fourth, that the lives of many young men are redirected and turned toward agriculture; fifth, that practical results in farming processes in the community are secured.

It is true that for years the farmers have berated the agricultural colleges, and have ridiculed the idea of learning practical agriculture in a school. But the quiet and effective work of the agricultural colleges and high schools has demonstrated beyond question the possibility of developing a farmer of expert type through the process of school education, and public sentiment is now rapidly swinging around in favor of collegiate agricultural instruction, and the same sentiment is being rapidly converged toward the public school. In many communities we find an insistent demand on the part of the farmers that agriculture shall be taught in public schools. Thus far, as Superintendent Blair indicates, the introduction of agriculture into the public school has been accomplished through the state department of education, the county superintendent of schools, and special men representing agricultural colleges. These men have presented the matter to local superintendents and boards of education by showing the opportunities for practical work,

and the necessity of vocational instruction. Through these agencies the public interest has been aroused. In this connection we should mention, also, the assistance which has been rendered in many cases by progressive farmers who were members of the Grange or farmers' club, or some other farmers' organization.

The people are manifesting an intense interest, and yet they are not demanding, in the foregoing states at least, that this new feature of educational work shall be rushed into the public schools without due consideration, or without the best possible previous organization and classification.

In all of these states, boards of education have authority to introduce any subject into the course of study which, in their judgment, is deemed of educational value. There is no need, therefore, for any permissive legislation; and the introduction of the work depends entirely upon the active interest of the school authorities.

It is a matter of common knowledge that if the state or the nation offers any special financial inducement to perform any public improvement, the people respond quickly because of the natural desire to get their hands into the public treasury. Proof of this is shown wherever state aid is offered for the building of good roads, canals, drainage, or any other improvement. It necessarily follows that if the state should offer a certain sum of money to be given to any school district which would introduce a course of agriculture, that such district would make strenuous effort to comply with such a law in order to secure the money. The effect, therefore, of state subsidy will be to stimulate the introduction of agricultural courses.

At the present time all vocational courses are new, and thus far lack development, coherence, and organization; and state educational institutions have given no particular attention to the training of teachers for this particular phase of work. Agricultural colleges have confined their efforts to instruction in purely technical lines, and have not given the instruction from the standpoint of teaching, or with even a "pedagogical squint." For this reason there are very few persons who are really fitted to undertake instruction in secondary agriculture. As has been stated before, the student is in the formative period, and an error of judgment on the part of the teacher, or an error in the presentation or organization of the work, may bring disastrous results to the individual student in the end.

In spite of all these facts, however, if the state offers the subsidy, the school district, the teacher, and all other interested parties are at once combined to introduce the course. With few exceptions the instruction in the one-year courses of agriculture is given by a teacher who has had no special preparation for the work, and thus has no power to enlarge upon the elementary text which the student uses. In Michigan, in all of the high schools where regular courses are presented instructors have been secured who are graduates of an agricultural college, and in addition have had special courses in general pedagogy and agricultural pedagogy.

It would seem, therefore, a wiser policy to introduce agricultural courses slowly and with trained teachers in charge, having back of the work a public sentiment which is being properly organized, and which will become permanent, rather than to rush into the work at the speed which would, without any doubt, follow the offering of state subsidy. It is difficult for any movement to travel very far in advance of supporting public sentiment. It seems to us that public sentiment, where state aid is offered, would be more largely based upon the desire to secure such funds, than upon a real interest and desire for the development of agricultural instruction. Up to the present time my observation leads me to the conclusion that while state aid would, without any doubt, stimulate the introduction of these courses, there is great danger of overstimulation, with a corresponding danger of poor results.

At this stage in the progress of industrial education it seems that it would be wise public policy for the several state institutions to give special attention to the preparation of vocational teachers. The agricultural college will thus find a new field of work, and a field through which it can ultimately reach all sections of the state and influence them effectively and at the same time conservatively. In my opinion a one-year course in any vocational subject is not sufficient; and further, it is my opinion that every vocational subject should be taught by a specially trained teacher. I do not believe it wise public policy to introduce such courses and then leave the instruction to one who has merely received training in the traditional subjects.

Further, if agriculture is to be successfully presented, sufficient time must be given to each of the great fields, or subjects, to develop some definite results in the student. We are giving three years to mathematics, four years to science, and at least an equal amount of time must be given to the subject of agriculture in order to give it a proper standing

in the regular curriculum. This fact alone will impress the student with the importance of the subject.

The intellectual element has always been dominant in education; and while we may give physical, moral, intellectual, and industrial instruction—and in my judgment all these courses should be given—still, in the work of public education the intellectual element must continually be dominant. We are not introducing courses in agriculture merely in order to turn out trained farmers, but we are introducing these courses in order that the student may relate general science to agricultural science, and leave the school with an intelligent knowledge of the application of the scientific principles, and with a vision of what he can do in the application of those principles in actual farm activities. In other words, we seek to dignify the subject of agriculture by making it a subject of study, and to impress upon the student the fact that while much has been said about the dignity of labor, there is absolutely no dignity connected with any labor which does not evolve a finished product. That is to say, the farmer who can produce perfect corn, or perfect sheep, or perfect clover is no longer a mere farmer; he is now a professional man because of the perfection of his product, and there attaches real dignity to the process of evolution. What the country needs is intelligent farmers, professional farmers, or men who are artists in their line.

If we are to secure these results we must take time to develop a course of study which shall be logical in its arrangement, contain proper subject-matter, and be presented to the student by an intelligently trained teacher.

It is not the purpose of this paper to discuss the merits of courses now being presented. As a matter of fact, there are about two hundred schools in the state of Ohio in which a course in agriculture is presented in one year of the high school, usually the tenth grade; and as stated above, there are something over one hundred high schools in the state of Nebraska presenting a similar course, and about two hundred in the state of Indiana. For the most part these courses are presented by teachers who have not received special training; yet the fact that the student actually does study agriculture, actually reads the bulletins and pamphlets from his state college of agriculture, as well as from the national department of agriculture, must prove of immense benefit to him. The value of these courses we cannot determine. We are satis-

fied that they do contain valuable educational elements; that they result in a higher degree of intellectual training, and afford opportunity for the application of the general principles of science which the student receives through his courses in botany, physics, and chemistry.

In Michigan we are attempting to develop a course in agriculture which shall constitute four units. The average high school presents fifteen- or sixteen-unit courses, and a fair balancing of the courses, in our judgment, would require four units of cultural work, eight units of disciplinary work, and three or four units of vocational work. The vocational instruction may include courses in agriculture, home economics, art, and trade courses, each elective. This plan is being pursued in two of the city schools in Michigan, and thus far is producing excellent results. In this way we develop industrial departments in the high school and attach the school to some of the chief activities of common life, and in the process of instruction during the four years of the high school, as the student comes in contact with ordinary scholastic material and with manual operations which require intelligence, we give time for the development of aptitude, knowledge, and skill.

The introduction of industrial departments in the high school will place such instruction before practically all of the young people of any county or community, and also reach the people of an entire state. At the same time we make use of educational facilities already organized, and thus render unnecessary the creation of new or special departments for agricultural or industrial instruction.

These seem to be the facts and conditions as they exist at the present time. After public sentiment has once been aroused, and the school authorities have developed a reasonable and workable course of study, it would seem then perfectly proper for the state to offer its aid in the support of vocational courses.

V A. SHORT COURSES AND EXTENSION WORK FOR AGRICULTURAL HIGH SCHOOLS—IN THE SOUTH

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Director Manassas Agricultural High School, Manassas, Va.

The purpose of the agricultural high school is to improve rural life. To accomplish this it must put itself in contact with the people who live on the farms. To reach these people it must make use of every device of demonstration and extension methods. I began my work as an agricultural high-school teacher with the usual assumption that if the younger generation can be educated in the best teachings of agricultural science and practice, it will quietly work a great revolution in the agricultural methods and life of the community.

I have not found the problem so simple. In the first place, country boys do not usually go to high school at all. The instruction in the rural schools is so bad and the terms are so short (5 to 6 months) that a boy of only average ability to learn is not ready for the high school until he is so old that the desire to learn is overcome by the need to earn. Only those boys try to finish the high school whose tastes and ambitions lead them toward the professions. In theory the agricultural courses should attract country boys to the high school; in fact, it is doing so at a rapidly increasing rate; but I have, like others, found myself face to face with the fact that only a distressingly small proportion of the boys do attend high school and that those boys are not as a rule farmers' sons and prospective farmers. This being the case, how can the school fulfil its mission?

My first thought was to do as the agricultural colleges did under similar circumstances, i.e., establish short winter courses for the sons of farmers. Notwithstanding my lack of room and equipment, I tried the plan and found it successful. There are within the reach of any agricultural high school a hundred young men who can and should take advantage of such a course lasting six to eight weeks and devoted to the subjects of greatest local interest. There are, however, in the smaller schools, such obstacles in lack of room, lack of equipment, and lack of

teaching-force as to make a full realization of the plan impracticable. Such a course would require the time of one person the greater part of the school year to interview the students and arrange lectures and laboratory sections. Accordingly as the work of teaching agriculture to the regular high-school classes has increased by the growth of the school and the increasing popularity of the subject, I have been, for the time, forced to give up this interesting and valuable part of the school's work. When, by federal aid or more liberal state appropriations I can have the necessary teaching-force and laboratory room to carry on short courses, I expect to take up the work again, and by a personal canvass of the surrounding territory offer a short course which is equal, so far as it goes, to that of an agricultural college. I have given such a course for two years and know of its possibilities from experience.

Farmers' institutes have been my most successful line of extension work. When I came to Manassas in 1908 I found no live organization of farmers with whom I could co-operate. I called a meeting of the farmers and after a pleasant session at which they were addressed by the late Dr. Seaman A. Knapp, I proposed that we form a permanent organization. The idea was adopted and a most successful series of meetings resulted. During the three years since the organization of the farmers' institutes of northern Virginia we have held twenty-two meetings, including a four-day traveling school of agriculture under the direction of the Virginia Agricultural College, a field demonstration in spraying, and three corn shows. These meetings are held in the courthouse on the third Friday of each month from November to April, inclusive. The average attendance for all meetings has been about seventy-five farmers, besides townspeople and school children.

Recognizing that unless the farmers are behind a school of agriculture it cannot be successful, I have endeavored to make this association the connecting link between the school and community. I believe that to these institutes more than to any other one factor I owe the success which I have had in making the agricultural school an integral part of the rural life of the district.

The success of the institutes has been due in most part to the high class of speakers which I have been able to secure from the U.S. Department of Agriculture and to the assistance and advice so freely given by Mr. D. J. Crosby, expert in agricultural education, of the Office of Experiment Stations.

As the winter days were cold and the roads long and muddy it occurred to me to utilize the class in domestic science by letting them serve a lunch to the farmers and their wives. This was done with the greatest success. The girls enjoy cooking and serving the meal and the visitors enjoy the hot, tasty, nutritious food which is served to them at the actual cost of the materials. The lunch has become a regular feature of the institutes and has, in no small degree, contributed to their success. At first these lunches were served at tables, but with the increasing numbers, the plan of a buffet lunch was tried with great success. The farmers get their well-filled plates and stand or sit in small groups eating and visiting in the most informal manner.

Valuable as the information given by the speakers has been, the social intercourse is even more valuable. This is a country of big farms and bad roads, resulting in more than the usual degree of rural isolation. This isolation has been intensified by the frequent changes in the ownership of farms since 1870, until, as a natural result there is but little of the community spirit. I can say without boasting that the school has done more to break up this isolation and develop a community feeling in three years than all other forces had done in a decade.

This year I am attempting to break down still further the barriers which distance and bad roads have imposed between the farmers by a series of meetings for farmers' wives. At these meetings they can become acquainted with each other, discuss problems of mutual interest, and listen to lectures on household problems by experts. In the forenoon both the farmers and their wives will meet in a session of general interest, while after the lunch the men and women will meet in separate sections, each with its own speaker. Excellent speakers have been engaged and there is every reason to expect that this department will prove to be as popular and useful as the other. Thus I am attempting to make the agricultural school the social and intellectual center of the newly aroused community life. The farmers' institute serves a double purpose, for it gives to the farmers what is best and newest in agricultural science and brings to the school the hearty support of those to whom it must look for its best pupils.

Nearly every phase of our local agriculture, such as corn, dairying, spraying, and feeding, are taken up in the course of the year and opportunity is afforded to have each topic brought up to date by its expert. Opportunity is also afforded for questions and discussions which often

prove more valuable than the lecture itself. Not all the time is given to scientists, but at each meeting some successful farmer is asked to give his method while the man of science gives the reason and principle. The agricultural classes attend the institutes and write reports of the lectures which serve as material for both English and agriculture. Some of the best English work of the school has been done on these agricultural topics.

Another successful line of work has been in the rural schools. As 75 per cent of the school children and practically all of the next generation of farmers attend the one-room rural schools, I have endeavored to reach them by such methods as would quickly interest them and were at the same time within the reach of my very limited resources. My efforts to improve rural schools are along two lines, the schools themselves and the future teachers who are now in the normal training classes.

As all farmers keep cows and raise corn, I chose milk testing and seed-corn selection as the best topics for my work in the rural schools. I borrowed a Babcock milk-tester from the Dairy Division of the U.S. Department of Agriculture, and with it and a small exhibit of choice seed corn I visit a country school each week. If the lesson is to be on milk testing the pupils bring samples of milk and with these I instruct both pupils and teacher in the operation of the test. Some of the parents are present giving me an opportunity to interest them in the work of the agricultural high school. I leave the machine at the school for a week so that all the pupils may become familiar with it and able to test the richness of the milk from each of their cows. The pupils then write me letters telling of their results, some of which I give here:

BUCKLAND, VA., November 9, 1911

DEAR SIR: We have been testing milk every other day this week. We have tested six samples of milk. We first put in the milk and then the acid, then turned for five minutes; then we took it out and filled it up to the neck of the bottle and turned it for two minutes; then took it out and filled it up to till all the butter-fat was up in the neck of the bottle; then turned for one minute more. The cows we tested were one of Doctor Brown's, two of Grahm's, one of Hall's, and our's.

I am nine years old.

WILL T. SWEENEY

BUCKLAND SCHOOL, VA.

BUCKLAND, VA., November 9, 1911

Prof. H. F. Buton, Manassass, Va.

DEAR SIR: We have been using your milk tester every day since you went away. We have tested six cows, there names were: Terry, 4.2 per cent, was Sweeney's; Mollie, 6.2 per cent, was Dr. Brown's; Chery, 4.7 per cent, was Grahm's; Boss, 4.5 per cent, was Hall's.

The way we tested it is: First, we would draw the milk up to that little rim on that long glass and then we would pour the acid into the milk and then we would shake it until it was black and then we would turn it five min.

Then we would turn it two min. more. Then we would pour the hot water in until all the fat was up in the neck of the bottle far enough so that we could see how much there was.

My name is John R. Sweeney—10 years old.

BUCKLAND SCHOOL, No. 1.

I have dozens of such letters and they show that the children know far more about the composition of milk than most of the parents. I have found this lesson the very best to introduce the subject of agriculture. It is interesting, almost spectacular, with the strong acid, the mysteriously hot bottles, the whirling wheels, and finally the clear yellow fat that tells that old "Blossom's" milk is twice as rich as that of "Spot." Still more important is the knowledge that it conveys to the parent as to the relative value of each cow. It is the beginning of the exact knowledge that makes for better farming.

At times I vary the lesson by giving one on corn judging. After this lesson it is much easier to teach about fertilizers and tillage. A seed-corn germination box is easy to make and to carry about. I prefer the sand-box type with strings for fences, as shown in Crosby's *Exercises in Plant Production*. The tiny fields appeal to the children and the sight of the plants growing in sand is much more convincing than the cloth and sawdust box. The sand-box type is, however, much heavier to carry about and more liable to spill than the Iowa tester made by marking cloth into two-inch squares, on each of which is placed five kernels taken from an ear of corn and the whole covered with a second cloth and sawdust to hold the moisture. As the use of fertilizers is almost universal and their purchase is one of the principal items of money outlay, I have found that a lesson on the composition and value of fertilizers is always appreciated. It may be made intensely interesting by showing the peculiar properties of phosphorus, potassium, and nitric acid.

After showing the spectacular side of the chemistry of fertilizers by a few experiments, such as lighting a fire with water, burning iron, and spontaneous combustion, I give an effective lesson on the arithmetic of fertilizers and the advantages of home mixing and co-operative buying.

I do not wish to convey the impression that the work is easy or the returns large. In those parts of the country where the soil is productive and the people prosperous and intelligent the work gives large returns. In such a neighborhood there is always some crop or product with which several of the patrons have made a success. In such a neighborhood and on such a topic I get a lively and intelligent response from the pupils which makes me feel sure the effort has resulted in a gain to the community and a strengthening of the bond between the farmers and their school. Not all the schools are so favorably situated. There is in the southern part of my territory a great belt of country between tidewater and Piedmont, called "The Forest," in which both agricultural and social conditions are most backward. Here my work of extension teaching is very difficult and the results meager. The population is sparse, the roads impassable, and agriculture unprofitable. When people derive their living from cross-ties and stave-bolts, it is a long step to interest them in Jersey cows and well-sprayed orchards. Yet despite the discouraging conditions I am doing much of my work among these schools, counting the greater need as an equivalent to the smaller returns.

This country-school work needs doing and if honestly done will bring support to the school and carry light to those who most need the help. Let no one who values comfort undertake this form of extension work, for there are long rides through deep mud, hurried starts, late returns, and cold rains as the usual accompaniments of the trips. I have found without exception that the teachers are glad to have me come and will co-operate with me in every possible way. The patrons when not apathetic are well pleased to have agriculture introduced in the school. Among the more thoughtful I find a widespread sentiment that their occupation has been slighted and neglected in the schools, and a full appreciation of any effort to improve conditions. There is urgent need for a wider and more sweeping regeneration of the rural school before the country child shall come to his rights, but if we wait for that time to come, many years may be lost.

I am making an effort to reach the teachers of country schools by my work with the normal class of the high school. To this class I

endeavor to give such lessons as will be most usable in their schools—testing the germination of seeds, tests for the simple food substances, starch, protein, fat, and sugar, the physical properties of soils, etc. The arithmetic of fertilizers is gone into in detail, as is the method of figuring out balanced rations. Especial attention is given to showing these future teachers how to set up and operate such experiments and demonstrations as will fix forcibly on the mind of the child some of the broader principles that underlie the practice of agriculture.

By milk and cream testing I have done much to bring the value of the school home to the farmers. I have spoken of the educational milk testing in the rural schools, but in the agricultural high school I test some 200 samples of milk and cream a year, the cream-shippers in particular finding it a means to avoid being cheated on the one hand and getting into trouble with the milk inspector on the other. If one of these men buys a cow he tests her milk that he may get a good one; if he sells a cow he tests her milk in order that he may sell a poor one. We have a cow-testing association of about a dozen enterprising dairymen who have stopped guessing about their cows. As the business of dairying grows this activity of the school will further increase. Several times in the past year I have had requests from local doctors for more complete analyses of milk, from which they are able to make up special modified milks for infant feeding.

An excellent barrel spray-pump furnishes means for another line of extension work. This pump is loaned out to people who wish to try spraying but have no suitable machinery. Spraying materials, such as concentrated lime-sulphur, arsenate of lead, and caustic-potash soap are furnished at cost. Some of the more advanced students go out and do small jobs of spraying, thus acquiring a proficiency that the limited equipment of the school cannot supply, and at the same time get people started at spraying who have never before attempted it. Last spring we used in this way more than a barrel of the concentrated lime-sulphur with arsenates in proportion. This year two barrels have been ordered and a still larger amount of work will be done. This is not a fruit-raising section and spraying is still an unusual practice, yet last year a dozen new barrel sprays came into the community as a result of our spraying propaganda. In many cases I have gone out to the orchards, set up the spray-pump, and instructed the owner in the adjustment of the nozzles.

In the village I am constantly called on to prescribe for the ailments of flowers, trees, and shrubs, and to destroy scales, plant lice, caterpillars, and miscellaneous "bugs." Outside of the village I am more and more frequently called on for expert advice on alfalfa, drainage, locations for orchards, sick cows, sick trees, and the like. Sometimes I can help and sometimes not, but the significant fact remains that there is a growing tendency on the part of the farmers to recognize the school as theirs, to be called on for all kinds of aid.

This year my extension work has been greatly facilitated by a fine stereopticon with a steel tank of compressed acetylene gas. After giving a lesson to a rural school I stay and give an evening illustrated lecture on some such topic as corn or dairying cattle. These evening meetings are always well attended and enable me to meet large numbers of people whom I can reach in no other way.

There are two excellent newspapers in the county, both of which have been liberal in their space and helped in their editorial columns. There is seldom a week when I do not have an article in one or both of these papers on some topic of timely interest. I review the lectures of farmers' institutes for those who were not there; I review scientific publications or give advice on the care of a crop or the control of some insect. These and other subjects furnish me a means of taking the benefits of the school out to the people on the farms who most need the aid and who are least able to secure it by regular instruction in the school.

If it be urged that my work begins at the top instead of at the bottom or that it is desultory, unsystematic, and without logical sequence, I must acknowledge the truth of the criticism. I can only say in defense that I am almost entirely without resources for teaching many topics, and that I am struggling to carry some message of a new and better agriculture to as many of my people as I can reach. I am doing all of this work in addition to the duties of a high-school director, teaching a class of twenty-eight in the last grammar grade, four classes in agriculture and three in chemistry in the high school, making six class periods a day, besides such allied activities as a Boys' Corn Club, thirty-two experimental plats, a forestry association, and a troop of Boy Scouts, so it can readily be seen what a man could do in extension work had he his whole time to devote to it.

VB. SHORT COURSES AND EXTENSION WORK IN AGRICULTURE FOR HIGH SCHOOLS—IN THE NORTH

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To those interested in education and who read the conflicting opinions relative to the success or failure of the agricultural teaching work in the various secondary schools of this country it is at once apparent that there is as yet no generally accepted policy as to what can and should be done by way of advancing agriculture through our secondary educational system.

It is not the intention in this paper to discuss an agricultural curriculum for a four-year high school. There is little at present to be added to the plans offered in the publications upon that subject already available from the U.S. Department of Agriculture and from the University of Wisconsin. The subject-matter to be discussed here has to do with the short courses and extension work in agriculture, for high schools and special secondary agricultural schools, now existing in these institutions in northern United States. The reader's personal judgment is depended upon for the analysis of values.

It is to be assumed that a competent and well-trained agriculturist is in control of the situation and that he is not to be hampered for want of authority or from lack of funds necessary to advance the work. The efforts of an institution must be along some well-defined lines, and (from an agricultural standpoint) we shall discuss the content of the work under four headings as follows:

I. SHORT COURSES—

1. Sixteen weeks young people's course
2. Farmers' lecture course
3. Farmers' one-week school
4. Institutes and summer tours

II. EXTENSION WORK—

1. Demonstrations on the individual farm
 - a) Field
 - b) Building
 - c) Live stock

2. Organization of societies
 - a) Cow-testing societies
 - b) Grain- and corn-growing associations
 - c) Social centers

III. INFORMATION BUREAU—

1. Personal consultation
2. Seed testing
3. Butter-fat tests

IV. PUBLICATIONS—

1. Bulletins and newspaper contributions

I. SHORT COURSES

1. Short courses of sixteen weeks are intended for those young people who can attend only that part of the year between the completion of the fall harvest and the beginning of the spring work. These young people are for the most part students who have had no institutional training for the business of farming which they expect to follow and who would be found in no school whatever were it not for these short courses now being offered.

The following two-year short course is effective in a Wisconsin secondary school as a continuation course for young men who are training for the business of dairying. It is assumed that they have completed the district school or that they have reached the age where a more mature judgment will aid them in their work.

FIRST YEAR—SIXTEEN WEEKS

Farm Crops: A study of seeds—crop rotation and economic factors.

Dairying: A study of the herd—the milk—the market.

Composition, penmanship, and spelling.

Civics and history.

Farm arithmetic and agricultural engineering.

SECOND YEAR—SIXTEEN WEEKS

Soils and commercial geography.

Stock judging and feeding.

Composition and spelling.

Bookkeeping and farm law.

Blacksmithing and power machinery.

These studies are definite and there is sufficient live material to create an interest for the work. This course has been successfully offered, beginning four weeks before the Christmas holidays and continuing through the sixteen weeks. A census covering three years of this work shows that, from the average of forty (40) students attending a local school for such a course, not one of these young men would have been in any school whatever had it not have been for such a special course of instruction.

2. The farmers' lecture course consists of a series of lectures upon agricultural subjects of interest alike to students and adults. This course covers one week at the local school and in Wisconsin the time of holding it is during the sixteen weeks' course when it is possible to secure speakers from the State University. This work not only gives instruction along special lines but it creates in those homes represented an added interest in the school work and materially increases the efficiency of all extension efforts.

3. The one-week farmers' school is for the adult farmer who is not a student but who is anxious to gather information that will aid him in increasing his financial returns.

During the one-week course regular classwork is given in subjects directly related to local farm problems, viz., corn and grain judging, milk and cream testing, stock judging, care and management of the herd, etc. This course has been well attended and where charges of one dollar (\$1.00) were made conditional to enrolment the numbers have increased rather than diminished. All this seems to point to the fact that the farmer is willing to accept and that the time is ripe for a more general offering of agricultural teaching in our secondary schools.

4. Institutes and summer lecture tours are designated as instruction given at meetings held at points other than at the school. These meetings take place within striking distance from the school. They are usually afternoon or evening meetings held on Friday or Saturday when the school faculty can be present to discuss subjects of local interest.

The summer lecture tours are arranged in a series which allows of several meetings during the day at different points. The more successful of these meetings have covered periods lasting the greater part of a week and the speakers were taken over the circuit by automobiles. From three to five meetings could be held each day at points from ten (10) to

twenty (20) miles apart, and, at times, by using two autos, it was possible to begin a second meeting before closing the previous one.

To illustrate the effectiveness of such meetings in getting at the people, the attendance was kept during one of these three-days series held in northern Wisconsin and the count gave 2,700 adult farmers who listened to the speakers.

The local school has, in all these courses, an excellent opportunity to connect up with the state agricultural college and not only to increase the efficiency of the local institution but, through the school, to enable the college to become more effective in its aid to the farming community.

Thus far there has been presented here the definite instruction as given by the faculty and outside assistance to groups brought together for the purpose. The other lines of work promoted by the local institution are upon a co-operative basis and with the individual in direct relation to the farm.

II. EXTENSION WORK

Let it be understood that in all the agricultural work to be done by these secondary schools there shall be no attempt made to engage upon the experimental side as a part of the school's activities. The fieldwork is to be purely demonstrative of the already accepted agricultural practices and facts; it is in the pushing of them among the agricultural people that the school can do its most effective extension work.

One should absolutely condemn the use of land that, in connection with a secondary institution, is a "show off" proposition. A field is a valuable laboratory when used as such, but to have a line of plants growing in plots arranged so as to be agreeable to the eye and with no definite educational aim in view is poor pedagogy indeed.

1. Demonstrations on individual farms will be guided largely by the wants of the individual and by the agricultural development needed in a community. (a) The well-known improvement in the quality of corn and barley upon the farms of Wisconsin is the direct result of the extension work done in the rural sections of the state. The alfalfa demonstrations, the tuberculosis demonstrations, and other similar lines of work pushed by the secondary institutions in Wisconsin have shown in a remarkable manner what benefits can come through local demonstrations.

(b) As an example of what can be done by way of aiding the farmer

with his building one need only to point out the work of the several special agricultural schools in Wisconsin in the building of concrete silos. These schools furnish at cost the forms and plans for the construction of silos. The cost of construction has been reduced over one-third and, in some instances where the farmer had sufficient help or where two farmers joined forces, silos sixteen feet in diameter and thirty-six feet high were constructed for one hundred and eight dollars (\$108), and this at points where the regular contract price had been over four hundred dollars (\$400). In addition to the fact that the price has been so far reduced that a farmer of very limited means can now construct a silo (that most necessary adjunct to a dairy farm), it is also true that the concrete is superior to the old stave silo.

(c) The extension work in live stock from the secondary schools in Wisconsin has developed mostly along the lines of dairying, aid in selecting a desirable sire, aid in milk-fever cases, testing for tuberculosis, and in other matters where expert knowledge could assist the farmer with his live stock.

2. The organization of local community associations in the various districts is a most effective means of improving agricultural practices. Many an individual farmer who cannot be reached through public meetings will join an association to which his neighbors belong. (a) The cow-testing associations in Wisconsin have effectually shown thousands of our dairymen that certain cows were being kept at a loss, and that by clearing the herd of these "boarders" the profits are increased. The following quotation from a secondary institution in Wisconsin will illustrate the part it takes: "Cow-testing—To encourage the improvement of the dairy interest among farmers the school assumed charge of the cow-testing work and through its official testers is testing over 750 cows at the present time. A charge of \$1.00 per cow per year is made for doing this monthly test work."

(b) The grain- and corn-growing associations organized in the rural districts have pushed the work of grain improvement among their members until Wisconsin as a state has come to be the source of the supply of seed corn and seed barley for many sections of other states.

(c) Social centers—a project now demanding much public attention—have been doing very effective work in practically every county in Wisconsin having a special school of agriculture. This was indeed the first satisfactory extension work of these schools toward reaching the farmers

in their homes. Small local clubs are organized and, stimulated by the occasional attendance of a member of the school faculty, they are a powerful influence in developing the natural resources of a community. The meetings are largely informal social occasions and, after discussing topics of special and timely interest, luncheons are served and often the entire neighborhood makes up the membership.

III. INFORMATION BUREAU

As a bureau of information relative to agricultural questions the office of the agricultural teacher is open daily.

1. The instructor seeks personal consultations with individuals having perplexing agricultural problems for solution. It is not expected that the teacher will always be able to give aid at the moment, but he is generally in a position to locate the desired information through correspondence or otherwise. Here again the splendid active assistance of the entire faculty of the State Agricultural College is available.

2. An increasing number of seed samples of all kinds are tested each year by the school. This work often saves a farmer from seeding his fields with noxious weeds, and the germination tests will insure him against using a seed of low germinating power. Many a farmer has wondered why his seed did not grow or has perhaps wrongly accused the crow of weakening his stand of corn.

3. In a dairy country we have come to measure our milk and cream by the percentage content of butter-fat. The method of determining this is, thanks to Dr. Babcock, general property, yet but a small number of farmers can operate the test. Here then is a valuable aid that the school, through its laboratory, can give to the individual farmer who brings his sample of milk or cream for analysis. Cases are in evidence where dishonest purchasers are trimming the butter-fat test of their patrons. If a local school stands ready to make a fair fat-test at any time there certainly is no objection to be offered by the honest dealer, and on the other hand it is a check upon dishonest practices where these agricultural interests are being victimized.

IV. PUBLICATIONS

Regular bulletins and contributions to local newspapers are necessary factors in the extension of agricultural interests. The publications answer the local pressing questions without delay. They are read with

added interest in all sections where the local school has been active; thus personal contact is taken advantage of to a high degree.

It should be understood that all extension work to be most effective should be preceded by a careful study and analysis of the community and its needs.

Educators disagree as to whether these short courses and extension work in agriculture shall be given in a special secondary school created for the purpose or be offered by the present high schools. A consideration of the arguments favoring the special school leads one to believe that when the high schools shall offer these short courses of from twelve to sixteen weeks during the winter they will have taken away one of the stock arguments favoring the special agricultural school as found in Wisconsin; indeed this special school will have served its purpose in that it has forced upon educators the recognition of this work. This, however, can be made possible only when the teaching profession shall have accepted the theory that any study is cultural that trains for social efficiency in the individual. The school that is training the youth to become a better farmer and a more useful citizen is certainly contributing as much to society as a school that is methodically clogging the natural resources of a youth by giving him "cultural subjects for culture's sake."

Today one need not be alarmed if he finds himself leaning toward utilitarianism in his views relative to educational subjects; indeed it is quite permissible, and financial returns can well be a factor in the general construction of any modern school curriculum.

On the other hand those directly interested in the executive side of agricultural short courses and extension work must pause in contemplation of the situation. Superficial work cannot long endure, and extension work in the hands of a group of easy talkers with a ready response to every question is often incomplete in its ultimate effectiveness. Extension work is not intended as an advertising bureau, but the fundamental keynote should be "service to men." Leaders with depth of thought are taking hold and improvement in methods and men means a higher ultimate efficiency.

In this work the agricultural people have been open to the accusation of being spectacular and possibly arbitrary at times. If this is true the only defense is that the ends justified the means. The appeal to the farmer in all this educational work has been from the standpoint of

financial returns; the dollar has always been uppermost. Educators of a conservative frame of mind have condemned this attitude as unprofessional, but in the face of all this the movement has been getting results. It is even true that the farmer has increased his bank account because of this aggressive work in the introduction of a new agriculture, and it is equally true that the salary of the conservative educator has not increased in like proportion. The farmer and his home surroundings are improved to such an extent that his social status is very acceptable to the most of us.

Is it necessary to establish new institutions in pushing this development or shall the secondary agricultural work be most effective when our entire extension system of education is sending its current of knowledge to the people over lines of contact already installed?

The future position which agriculture is to occupy in our secondary educational system is as yet an unsolved problem. Of one thing we are quite sure, that education must yield to the growing demand that agriculture have a place in our secondary schools and if the high schools will insist upon dwarfing the importance of agricultural instruction and of holding to the attitude of *toleration* rather than to that of *sympathetic aid* and *aggression*, then will they surely fail because of their narrowness, and the special agricultural school will sweep over the country. The struggle is on. Will the high school rise to its opportunity? We believe it will.

VIA. IN PUBLIC HIGH SCHOOLS SHOULD AGRICULTURE BE TAUGHT AS AGRICULTURE OR AS APPLIED SCIENCE?

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In arriving at an answer to the question as to whether agriculture should be taught as agriculture or as applied science two assumptions are imposed: first, that agriculture is teachable as such, and second, that it is also teachable as something else, i.e., as applied science. One's mental equipment and mental attitude toward both the subject and what it means to teach will influence his answer. These points of view are suggested as a basis for the discussion which follows. What is the probable attitude of the practical farmer without scientific training? What is the probable attitude of one trained in science without practical experience in the various arts of agriculture? What is the attitude of the learner who has had some practical experience in farming? What is the attitude of the learner who has had no experience in farm arts? The teaching of agriculture must mean something different to each of these persons.

If the practical farmer were asked to give his idea of what it means to teach agriculture to a class of high-school boys, his answer would probably be reducible to some such formula as this: "Teach the boys how to do the various things needful for carrying on the farm operations." If the farm is devoted to crop raising, these operations would be largely confined to the arts of tillage, planting, harvesting, storage, and marketing. It would also include, more or less incidentally, the care and handling of horses and the use of tools and machinery. If, however, the farm were primarily devoted to stock raising, the relative importance of the crop-raising arts and animal husbandry would be reversed. The emphasis would tend to be placed on the animal aspect, while raising crops would become incidental. In either case the farmer-teacher would place the greater emphasis upon the art of doing things. This

seems inevitable from the nature of his training. The more skilful he is himself, the more prominent would become the art aspect of his instruction. The student under such influence would easily become a trained operative in agriculture, rather than an educated agriculturist. The instruction would be direct, immediate, practical, and narrow, because of the circumscribed outlook and limited insight of the teacher.

If the same question, "What does it mean to teach agriculture in a high school?" were put to a man trained in science, the answer would in all probability tend toward the formula, "You cannot teach the application of science until you have taught the science." This attitude would postpone the study of agriculture till after a study of the sciences which are to find their application in agriculture. A foundation knowledge of scientific methods and of scientific principles would be insisted upon as a prerequisite to their application in the art of agriculture. The reason for doing things would be dominant. The laws governing the activities of Nature in the production of plants and animals would be magnified. The art of plant culture and of animal husbandry would be correspondingly minimized. The attitudes of the "farmer-teacher" and the "science-teacher" are antithetical. The "science-teacher" would become so absorbed in one or two sciences that agriculture would be touched incidentally, or as a student recently expressed it, "accidentally." The "farmer-teacher" would become so intent upon agriculture that he would lose sight of the underlying sciences. He could not see botany for so many vegetables, nor zoölogy for so many animals, nor chemistry for so much manure, nor physics for so much tillage. The "science-teacher" would be as constantly losing sight of the apple in pomology, the horse or cow in zoölogy, the fertilizer in chemistry, and soil drainage in physics. In very truth, the teacher of agriculture must be a man of perfect balance.

What of the student? One type of student brings to the study of agriculture a body of knowledge which we call practical experience. If the experience (practice) has been good the knowledge is valuable. If the practice has been bad the knowledge gained by it is injurious, because of the tendency of acquired habits to stay fixed, whether they are habits of thinking or habits of action. A person in this state of mind will approach the study of agriculture prejudiced with the idea that the way things have been done by himself in the past is a justification for doing them the same way in the future. The superficially

reasoned-out modes of operating the arts of agriculture from the narrow range of individual experience makes the mind inert. Opposed to this mental inertia is the scientifically reasoned-out justification for doing the thing at all. The practical craftsman justifies the art by the mode of operating it; the scientific operator, by the reason for the operation. This is the point at which theory and practice often come into conflict. And there is nothing which damages a theory so much as its inability to work.

This conflict between theory and practice is inevitable. It has two reasons for occasionally happening. One lies in the domain of each of the parties to this age-long controversy. Theory, on the one hand, is only a way of expressing in general terms one's idea about a group of facts or the reasons for a course of action. The idea, or conclusion, or generalization may be based upon too small a number of factors, or by giving undue weight to some factors and underestimating or ignoring others. On the other hand, practice is only the customary way of doing things. The method finds its chief justification in tradition. Its chances for being in error lie in the fact that the inception and continuance of a given practice often rest upon too narrow a range of experience. The more completely one justifies his practice by his individual experience alone, the less plastic is his mind in the presence of a disturbing theory, however well fortified the theory may be by scientific experimentation.

What of the person who comes to the study of agriculture unskilled in its arts and ignorant of the fact that, as a mode of life, it is in any way related to science? This state of mind is the virgin soil for exploitation by both the misnamed practical man and the much abused theoretical man. Here each congratulates himself that he has before him a clean slate on which he may write at will. One rejoices that here is a student innocent of the habits of a faulty practice; the other, that the student is unprejudiced by false theories.

The ideas in the foregoing suggestions seem to stand at the threshold of the discussion of the question as to whether agriculture should be taught as agriculture or as applied science. Taking the question at its face value as thus stated, the answer is easy. In fact, it is too easy for safety. A brief argument may be formulated in favor of teaching it as "applied science" as follows: "Agriculture is applied science, therefore it can only be taught as applied science." This mode of answering the

question is quite satisfactory to some minds. It fails short of being entirely satisfactory because it ignores two or three important considerations. These may be stated in the form of questions.

1. What are the motives for studying a science?
2. What are the motives for studying agriculture?
3. When is a science applied?

One other consideration must be taken into account whether one is conscious of it or not. That is, what function is the course of instruction supposed to perform for the pupil of high-school age?

First, as to the motives for the study of science. In these days science has reached so great a development in so many directions that it has in some of its phases become universal as a school study. Science does not get so much of the school time devoted to it as the languages do, but some aspect of it is taught in practically all schools. Its universality as a school subject seems to justify its claim for having educational values. Science must have a high degree of mental sustenance to have become so universal. What these mental values are need not be dwelt on here. It is enough to say that many pursue science not for the sake of any use they expect to put it to, but for the pleasure its possession gives them in their leisure and the insight it gives into the mysteries of the world of Nature about them in their daily work. In other words, science as a study has justified itself as a cultural and humanizing study of the highest order.

Correlative with this, science has its utilitarian aspect. Whatever may be claimed for it in giving the mind freedom from prejudice, and adding to one's joy of living, science will always remain a most practical study. Its practicalness lies in its application to things that are seldom thought of as being scientific in themselves. This is especially true of the theme in hand, namely, agriculture. Agriculture, which has been carried on so many generations by men untrained in science, is the latest of the great human vocations to benefit by the message science has to offer for man's welfare. The fact that the arts of tillage and husbandry are so simple as arts discourages the attainment of a high degree of skill. The application of the principles of science or of scientific method to an occupation so wanting in skill has always met resistance. This resistance seems to grow out of the fact that the workman unschooled in the science of his craft regards his work as a thing by itself and especially as a thing apart from science.

Science in the broad sense of the term has a greater message for agriculture than for any other single human industry. To put it a little more accurately, the various sciences have a multitude of messages for the numerous arts that are included under the word agriculture. There is hardly a branch of learning included in the term science which does not stand ready with a helpful message for the advancement of agriculture. Physics in its application to tillage, chemistry in the analysis of fertilizers and animal nutrition, biology in the exemplification of the laws of life, meteorology in its seasonal control of the year's succession of activities, and geology with its productive elements, the basis of soil-study as well as of plant production, all contribute to the upbuilding of a scientific agriculture.

To weigh these different bodies of scientific knowledge and to give to each its proportionate share in the advancement of agriculture requires a mind of unusual grasp.

To contend that even the simplest elements of each of these sciences should be studied with a view to their use as applied sciences afterward would preclude the possibility of the study of agriculture in any form during the high-school period. When viewed from the standpoint of the sciences involved in it, the teaching as well as the study of agriculture becomes the most complicated educational problem the public schools have ever undertaken to master.

Instruction in agriculture has two distinct phases. One involves the process of learning the art of doing things connected with the field, the garden, the barn and feed yard, the orchard, the meadow, the wood lot, and the toolhouse. The other phase of agricultural instruction relates to the sciences on which these several arts depend for their explanation. Art and science instead of being opposed, are more intimately connected in the study of agriculture than in any other subject now offered in the schools, unless it is language. The vitality of language as a school study through the centuries is due to the intimate blending of the two arts of speaking and writing with the two sciences of grammar and logic. When we once become conscious of this indissoluble tie between the arts of communication and the sciences of human thinking, no school reform will ever lay violent hands on grammar and logic.

Agriculture is much more complex. Instead of embracing only two, it has a large group of arts. Instead of being explained by only two sciences, agriculture lays tribute on nearly every science known to man.

And when the teacher of either agriculture or of science once becomes conscious of this ganglionic tie between the agricultural arts and all of the sciences he will teach science less "for the sake of science" and more "for the service of man." Now, the knowledge embraced within the domain of a given science has, in most cases, been so well systematized that a serial group of lessons may be arranged for orderly school work with very little trouble. One lesson follows another in causal or sequential order because of the relation of their subject-matter one to another. Progress is in the nature of motion in a straight line. Lessons in agriculture have little if any logical order so far as being dependent upon each other, in a causal way. It is on this account that lessons in plant culture may begin with the fruit, the roots, or the stem as is convenient. In case the fruit is taken as a starting-point the succeeding lessons, instead of running in a straight line like a series of causes and effects, or a group of closely related sequences, represent a group of sciences with the first lesson as a center of radiations. These sciences may have fairly well-defined lines separating them from each other, but the lesson on the fruit of a given plant is inseparable from either of them. It is an undivided part of each science. And the series of lessons on the fruit must go from science to science until the circuit is complete. Take an example:

The meagerest sort of a lesson on the apple would include such features as variety, form, color, size, and uses. But its variety is identical with so much of its botany; its form is involved in geometric mathematics; its color is a matter of physics, chemistry, and meteorology, and possibly of geology; its size is due in part to variety, which is botanical, in part to climate, which is meteorology, in part to altitude and latitude, which are geographical, in part to nourishment, which is physiologico-botanical; its uses first as food, second as an article of commerce, third as a source of power in the form of alcohol, identify the study of the apple with the sciences of domestic economy, economics, and political economy. From this it is plain that a lesson on the apple merely as a fruit, instead of being the beginning of a series of lessons following one after another in a dependent order, becomes the center for progress in the form of a spiral rather than of a straight line. The apple is the converging point for seven or eight well-defined sciences. And the study of the apple that confines itself to the most obvious features of it, i.e., variety, form, color, size, and uses, must cross-section each of the seven

or eight sciences. Each science in turn gives its message toward the explanation of the apple.

The apple is serving a double rôle in this illustration—it is both a center for the convergence of a group of sciences and at the same time a center of radiation into a surrounding group of sciences. And the question may now be put, as to whether the apple should be studied as a means of introducing a student to the sciences, or whether the sciences should be studied as a means of understanding the apple.

The field from which similar illustrations might be drawn is as wide as the whole field of agriculture. Examples may be found in animal life, in the garden, the forest, and in the field. Whatever object is taken, whether an apple, a potato, an ear of corn, a hen, a horse, or a forest nut, the same group of sciences must be looked to for principles of explanation and for guides to conduct in dealing with the object. These objects of study are tied up with human interest. This is what makes them agricultural. Science for science's sake is unrelated to human interests. Botany as such never touches man. Zoölogy as such only touches man as an animal, and as a science is unrelated to human interests until it deals with horses and hogs and hens, not because they are animals but because they are man-nurtured animals. Botany allies itself with human interests only when it deals with plants as they are related to human welfare. The human-interest aspect of the physical and biological sciences is what makes certain substances like soil, water, and air, and a few plants and animals, agricultural. To teach these things apart from their human interest makes them simply objects of science and non-agricultural. It would, therefore, appear that from the standpoint of the close relation of the farm arts to the sciences, or from the standpoint of human interest, agriculture should be taught as agriculture and not as an applied science.

VIB. IN THE PUBLIC HIGH SCHOOLS AGRICULTURE SHOULD BE TAUGHT AS AGRICULTURE, NOT AS APPLIED SCIENCE

G. F. WARREN

Professor of Farm Management, Cornell University, Ithaca, N.Y.

A very large part of our agricultural instruction may be combined with other sciences and will serve to enrich these studies. I believe that agricultural illustrations will almost revolutionize the teaching of science, which is in danger of becoming too academic. So soon as we get a science well systematized with definite sets of laboratory exercises, which we feel are fixed for all time, we have lost one of the most useful features about science, that is, that it studies the earth and the civilization that surrounds us—conditions that are ever changing.

While teaching capillarity in physics, the soil offers a most valuable illustration. While teaching friction, such questions as the relative draft of riding and walking plows may be cited. A well-constructed riding plow will carry a man and draw easier than will a walking plow, because a third of the draft of the walking plow is due to friction on the bottom of the furrow, whereas with the riding plow, the friction is placed on the axle and the axle is greased. Another illustration might be given of the reason why placing the double-tree below the tongue will enable a team to pull a heavier load than if the double-tree is high, as in the case of carriages. The first thing that gives way when a horse fails to pull a load is the feet. The horse cannot stick to the ground, but if hitched low a part of the load will pull down on the back, making the horse "heavier" and the friction greater, and will enable the horse to pull more. This is also one of the reasons why a draft horse should be heavy.

While teaching bookkeeping in rural high schools, farm accounts rather than operations involving some large city business should be used for at least a part of the illustrative material. Farm accounts are more complicated than are the accounts for city business. They would, therefore, better meet the objection that some people have to bookkeeping—that it does not require sufficient mental application.

I know of no better ecological illustration for the botanist than the lime requirement of plants. Alfalfa may fail for lack of lime where clover thrives; clover may fail and timothy yet thrive; timothy may fail and still redtop may grow. Similar illustrations for these and other sciences may be multiplied indefinitely.

Since agriculture is based on all the sciences, some persons have argued that it can best be taught by having the principles presented in the separate sciences, as illustrated above, rather than by having a new subject. This argument may sound logical, but it is utterly impracticable. Our textbooks of science are not written by persons who know much about agriculture. As soon as they go beyond a few very general illustrations they are more likely to emphasize some popular fallacy than to give real scientific principles. Agriculture is a new and rapidly growing science. To keep all the textbooks up to date would be an impossible task. It will be difficult enough to keep the textbooks on agriculture up to date without having to revise the agriculture in the science books every year. A good textbook of chemistry is good the world over. It ought to include illustrations from agriculture as well as from all other fields of human experience to make it good chemistry, but such illustrations must be very general. Agriculture is more local in its pedagogy. The cotton plant and the apple may illustrate a certain point equally well, but in teaching agriculture we will want to use the illustration that fits the region.

Our teachers of science are not likely ever to know enough about agriculture to be able to go very far with the introduction of agriculture into the sciences. Many good chemistry teachers come from the cities and villages and know nothing about agriculture. No teacher is likely to be of much use in teaching agriculture who has not had a good farm experience as well as a good course in this subject.

For a generation the agricultural colleges tried to have agriculture taught by botanists, chemists, etc., but not until they added professors of soils, crops, and cows were their agricultural teachings of much value to prospective farmers. The high schools will save time if they profit by these many years of experience. But there is another reason why agriculture must be a separate subject, if very much is to be accomplished. Agriculture is a science in itself—a science in part founded on other sciences, in part independent, just like all sciences. It is certainly as much an independent science as is the science of medicine. We

should not think of expecting the teachers of botany, zoölogy, chemistry, and physics to train physicians. No matter how many medical illustrations these teachers may use, we must always have separate departments and separate instruction that will correlate all these sciences into a single unit—the science of medicine. Similarly we must have all the sciences correlated into the unit—agriculture.

Let us take a single illustration. How would the teaching of crop rotation proceed if there were no separate subject of agriculture? Crops are rotated:

1. To control weeds.
2. To control insects.
3. To control fungi.
4. To keep up the humus supply.
5. To secure the benefits of growing grasses and legumes on each field.
6. For convenience in working.
7. For control of toxic substances.

Possibly the botany teacher might mention weeds, fungi, legumes, and grasses in this connection, and might even discuss toxic substances. The teacher of zoölogy might mention crop rotation as a means of controlling insects. Certainly no science teacher would consider the convenience in working that comes from growing crops in a certain order, yet this is the chief reason that leads farmers to rotate crops. But if all these points were mentioned at various times and in this disconnected way, it would not teach crop rotation.

More important than the reasons for crop rotation is the planning of cropping systems adapted to particular farms. This does not belong in any of the sciences except the science of agriculture.

Perhaps no error is more prevalent than the idea that agriculture is nothing but the application of other sciences. Even some agricultural colleges still fail to grasp the idea that agriculture is itself a science. Probably half of the best teaching of agriculture is not the application of any science except the science of agriculture. The laying of a tile drain is not physics. The training of a colt is not zoölogy. The grading and packing of apples is not botany.

The selection of a farm is one of the most important decisions in the life of a farmer; such a selection should be based on scientific principles. The decision as to the best type of farming for the region, the stocking

and equipping of the place, the cropping system to be followed, are of the utmost importance to the farmer. But to what science do these things belong except the science of agriculture? A mistake in one of these cannot be overcome by any knowledge of life histories of insects or ideas on how plants grow.

Any school course that pretends to prepare for farming must teach the usual sciences and ought to include in these as many agricultural illustrations as possible, but to try to give agricultural training without agriculture as a separate subject is like *Hamlet* with Hamlet left out.

CONSTITUTION OF THE NATIONAL SOCIETY FOR THE STUDY OF EDUCATION

(Revision Adopted in Chicago, February, 1909)

ARTICLE I

Name.—The name of this Society shall be “National Society for the Study of Education.”

ARTICLE II

Object.—Its purposes are to carry on the investigation and to promote the discussion of educational problems.

ARTICLE III

Membership.—SECTION 1. There shall be three classes of members—active, associate, and honorary.

SEC. 2. Any person who is desirous of promoting the purposes of this Society is eligible to active membership and shall become a member on approval of the Executive Committee.

SEC. 3. Active members shall be entitled to hold office, to vote, and to participate in discussion.

SEC. 4. Associate members shall receive the publications of the Society, and may attend its meetings, but shall not be entitled to hold office, or to vote, or to take part in discussion.

SEC. 5. Honorary members shall be entitled to all the privileges of active members, with the exception of voting and holding office, and shall be exempt from the payment of dues.

A person may be elected to honorary membership by vote of the Society on nomination by the Executive Committee.

SEC. 6. The names of the active and honorary members shall be printed in the *Yearbook*.

SEC. 7. The annual dues for active members shall be \$2.00 and for associate members \$1.00.

ARTICLE IV

Officers and Committees.—SECTION 1. The officers of this Society shall be a president, a vice-president, a secretary-treasurer, an Executive Committee, and a Board of Trustees.

SEC. 2. The Executive Committee shall consist of the president and four other members of the Society.

SEC. 3. The president, vice-president, and secretary-treasurer shall serve for a term of one year. The other members of the Executive Committee shall serve for four years, one to be elected by the Society each year.

SEC. 4. The Executive Committee shall have general charge of the work of the Society, shall appoint the secretary-treasurer, and may, at its discretion, appoint an editor of the *Yearbook*.

SEC. 5. A Board of Trustees consisting of three members shall be elected by the Society for a term of three years, one to be elected each year.

The Board of Trustees shall be the custodian of the property of the Society, shall have power to make contracts, and shall audit all accounts of the Society, and make an annual financial report.

SEC. 6. The method of electing officers shall be determined by the Society.

ARTICLE V

Publications.—The Society shall publish *The Yearbook of the National Society for the Study of Education* and such supplements as the Executive Committee may provide for.

ARTICLE VI

Meetings.—The Society shall hold its annual meetings at the time and place of the Department of Superintendence of the National Education Association. Other meetings may be held when authorized by the Society or by the Executive Committee.

ARTICLE VII

Amendments.—This constitution may be amended at any annual meeting by a vote of two-thirds of voting members present.

MINUTES OF THE MOBILE MEETING OF THE NATIONAL SOCIETY FOR THE STUDY OF EDUCATION

(Held in the Elks' Club, Mobile, Ala.)

DISCUSSION OF YEARBOOKS, WEDNESDAY, FEBRUARY 22, 7:30 P.M.

BUSINESS MEETING, FRIDAY, FEBRUARY 24, 4:30 P.M.

President Carroll in the Chair

S. Chester Parker, Secretary

The Wednesday evening meeting was devoted to a discussion of the *Yearbooks*, Part I, "The City School as a Community Center," Part II, "The Rural School as a Community Center." The following persons participated in the discussion: Mr. Lee F. Hanmer, of the Russell Sage Foundation; Professor B. M. Davis, Miami University, Oxford, Ohio; Superintendent Davidson, of Omaha, Neb.; Professor Baldwin, of the Hyannis, Mass., Normal School; Superintendent Cooke, of Baltimore County, Md.; Professor Strayer, of Teachers College, New York City; Professor Sutton, of the University of Texas; Superintendent Hamilton, of Allegheny Co., Pa.; Professor Forbes, of the University of Rochester.

Most of the speakers held definitely to the subject under consideration, describing practical examples of the work with which they were acquainted. Professor Forbes, on the invitation of President Carroll, delivered a carefully prepared, twenty-minute summary of the practical social significance of the work that is being done to make the schools real community centers.

The President announced the following Nominating Committee: Professor W. S. Sutton, of the University of Texas, Professor Manfred J. Holmes, of Normal, Ill., Superintendent J. H. Van Sickle, of Baltimore, and Superintendent A. S. Cooke, of Baltimore Co., Md.

Friday, February 24, 4:30 P.M. was chosen for the business meeting. The following business was transacted at the Friday meeting:

The minutes of the Indianapolis meeting were read and approved.

The report of the nominating committee was received and adopted, the following officers being elected:

President, Professor W. C. Bagley, of the University of Illinois.

Members of the Executive Committee: Superintendent W. H. Elson, Cleveland, Ohio, for four years; Professor G. D. Strayer, of Teachers College, to fill remaining two years of the unexpired term of Professor Suzzallo who had resigned on account of stress of administrative work.

Trustee, R. P. Halleck, Louisville, Ky.

The report of the Secretary-Treasurer was received, ordered to be printed in the next yearbook. It was ordered that the accounts of the Secretary be audited by the Trustees.

Professor C. H. Judd, chairman of the Board of Trustees, suggested the advisability of trying to arrange a subscription combination with the *Teachers College Record* and the *Elementary School Teacher*, whereby the publications of the Society would be given wider circulation and the members of the Society receive greater value for their dues. By motion, the officers of the Society were authorized to canvass the possibilities of such a combination and submit it to the active members of the Society by mail for referendum vote.

Following the suggestion of President Carroll, the meeting voted in favor of the following topics for the 1912 yearbooks: Part I, "Industrial Education in City Schools;" Part II, "Agricultural Education;" the yearbooks to consist largely of description of typical experiments along these lines by specialists who are actually engaged in the work.

Meeting adjourned.

CLARENCE F. CARROLL, *President*
S. CHESTER PARKER, *Secretary*

REPORT OF SECRETARY TO EXECUTIVE COMMITTEE AND TRUSTEES AT THE MOBILE MEETING

Number of Members December, 1910:	Active.....	141
	Associate.....	97
	Total.....	238

FINANCIAL CONDITION OF THE SOCIETY

Resources.—Twenty-seven active members and 21 associates were delinquent for 1910 on December 31. This leaves a probable paying membership as indicated in the following table which includes income from publications sold by the University Press:

	Number	Total
Active members paying \$2.00.....	114	\$228.00
Associate members paying \$1.00.....	76	76.00
		<hr/>
Income from members.....		\$304.00
From University Press, June, 1910.....	\$504.66	
From University Press, January, 1911...	259.17	
	<hr/>	763.83
		<hr/>
Estimated total annual income		\$1,067.83

The income from the sale of publications is approximately two and one-half times that from members.

Estimated Average Annual Expenditures

Manufacturing and distributing two Yearbooks....	\$600.00
Editorial expense for same.....	60.00
Secretary's salary.....	100.00
Stationery, printed notices, etc.....	20.00
Postage.....	20.00
Typewriting.....	10.00
	<hr/>
	\$810.00

This estimate may be a little too low as it indicates a probable annual profit of over \$200.00.

Analysis of Income from Publications

The largest items in the sale of publications by the University Press during 1910 were the following:

IX-1.	Wood, <i>Health in Education</i>	\$183.15
VIII-1.	Henderson, <i>Sex in Education</i>	61.20
VIII-2.	Henderson, <i>Sex in Education</i>	63.90
	Dewey, <i>Ethical Principles</i>	107.05
	Dewey, <i>Interest</i>	86.10
	Bound Volume, National Society.....	24.00
	Bound Volume, Herbart Society.....	24.00
VII-1.	Lowry, <i>Professional Improvement of Teachers</i>	21.15
V-2.	Cubberly, <i>Certification of Teachers</i>	29.16
VI-2.	<i>Kindergarten and Elementary Education</i> ...	23.04
VII-2.	<i>Kindergarten and Elementary Education</i> ...	19.35
Total.....		<u>\$642.10</u>

These sales constitute 84 per cent of the total sales.

The following items are especially noteworthy:

1. Dewey's two pamphlets realize as much as 63 per cent of the membership dues.

2. Henderson's books have returned in sales 80 per cent of their original cost (cost about \$560.00; sales 1909-10, \$447.00).

3. Wood's book has realized 40 per cent of its cost in the first year of sales (a very expensive book; manufacturing cost, \$300.00; editorial expense, \$135.00; total, \$435.00).

Respectfully submitted,

S. CHESTER PARKER, *Secretary*

FINANCIAL REPORT OF THE SECRETARY-TREASURER

JANUARY 1, 1911, TO DECEMBER 31, 1911

RECEIPTS

Balance on hand January 1, 1911.....		\$733.69
Sales by the University Press—		
June to December, 1910.....	\$259.17	
January to June, 1911.....	387.46	
	<hr/>	\$646.63
Interest on savings' bank account.....		9.56
Dues from members (current and delinquent)—		
Active.....	\$333.40	
Associate.....	94.10	
	<hr/>	\$427.50
Total income for the year.....		<hr/> \$1,083.69
Total including initial balance.....		<hr/> \$1,817.38

EXPENDITURES FOR 1911

Usual Expenses

<i>Publishing and distributing two Yearbooks—</i>		
Printing <i>Tenth Yearbook</i> , Pt. I (City Social Centers).....	\$217.13	
Printing <i>Tenth Yearbook</i> , Pt. II (Rural Social Centers)....	215.99	
Editorial expense, <i>Tenth Yearbook</i> , Pt. II (Davis).....	15.95	
Mailing above Yearbooks.....	32.00	
Reprints for contributors.....	35.20	
	<hr/>	<hr/>
Total cost of usual Yearbooks.....		\$516.27
<i>Secretary's office—</i>		
Secretary's salary.....	\$100.00	
Mobile traveling express.....	46.00	
Typewriting.....	\$31.39	
Stationery.....	14.08	
Stamps.....	20.50	
Express.....	1.30	
Telegrams.....	5.25	
Exchange.....	1.85	
	<hr/>	
Total running expenses.....	\$74.37	
	<hr/>	
Total for Secretary's office.....		\$220.37
<i>Other expenses—</i>		
Mobile stenography for President Carroll.....	\$2.24	
Refunds of excess paid on dues.....	2.00	
	<hr/>	<hr/>
Total other expenses.....		\$4.24
Total usual annual expenses.....		\$740.88

Unusual Expenses

Printing a third Yearbook (<i>Ninth Yearbook</i> , Pt. II, Wood, <i>Nurse in Education</i> , should have been issued in 1910)...	\$176.90	
Mailing same.....	15.23	
Manufacturing 100 bound volumes (done every five years) ..	45.00	
Reprinting <i>Eighth Yearbook</i> (Henderson, <i>Sex</i>).....	114.80	
Reprinting <i>Ninth Yearbook</i> (Wood, <i>Health</i> , and <i>Nurse in Education</i>).....	133.00	
	<hr/>	
Total unusual expenses.....		\$484.93
		<hr/>

SUMMARY

Usual annual expenses.....	\$740.88	
Unusual expenses.....	484.93	
	<hr/>	
Total expenditures, 1911.....		\$1,225.81
Balance on hand December 31, 1911.....		591.57
		<hr/>
		\$1,817.38

S. CHESTER PARKER, *Secretary-Treasurer*.

Bagley, William C., University of Illinois, Urbana, Ill.
 Baldwin, Bird T., State University, Austin, Tex.
 Beegs, A. H., Whittier School, Denver, Colo.
 Benedict, Ezra W., Walden, Orange Co., N.Y.
 Blaine, Mrs. Anita McCormick, 344 East Erie St., Chicago, Ill.
 Bolton, Frederick E., 1019 College St., Iowa City, Ia.
 Boyer, Charles, Superintendent of Schools, Atlantic City, N.J.
 Bradford, Mrs. Mary D., Superintendent of Schools, Kenosha, Wis.
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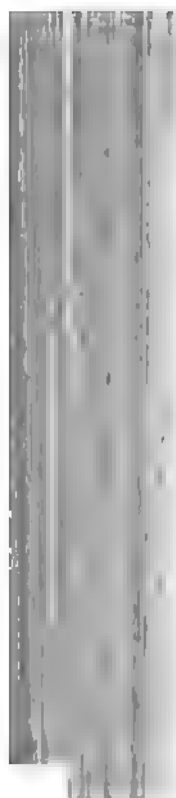
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